



Environmental Impact Report Novato General Plan

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Acknowledgements

Novato History Museum, Novato, CA
for historical photograph of
Novato City Hall area

NOVATO GENERAL PLAN REVISION



Leonard Charles
& Associates

DRAFT
ENVIRONMENTAL IMPACT REPORT
(Revised and Recirculated in November, 1995)

DRAFT ENVIRONMENTAL IMPACT REPORT


NOVATO GENERAL PLAN REVISION

(Revised and Recirculated in November, 1995)

November, 1995

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1.0 INTRODUCTION SECTION

1.0 INTRODUCTION SECTION

1.1 PURPOSE OF THE ENVIRONMENTAL IMPACT REPORT

The purpose of this Environmental Impact Report (EIR) is to identify and evaluate the potential environmental impacts of the proposed City of Novato General Plan. The General Plan sets policy guidelines for future growth and development in the City of Novato.

This EIR is an informational document which is intended to inform the City, as Lead Agency, other public agency decision-makers, and the public of the potentially significant environmental effects that will result from adoption of the new General Plan. The City shall consider the information in this EIR along with other information presented during the decision-making process. Although the information contained in this EIR does not control the City's ultimate decision on the Plan, the City must respond to each significant effect identified in the EIR by making findings under Section 15091 of the *California Environmental Quality Act (CEQA) Guidelines* and, if necessary, make a Statement of Overriding Considerations under Section 15093.

Revised Draft EIR

A Draft EIR was prepared on a Draft General Plan that was prepared in June, 1995. This Draft EIR was circulated for public review; the public review period extended from July 18 to September 1, 1995. The Novato Planning Commission held Public Hearings to take testimony on the adequacy of the Draft EIR as well as on the Draft General Plan. Prior to authorizing the EIR consultants to respond to the comments received in the letters and at the Public Hearings, the City decided to revise the Draft General Plan. This decision was based on comments received on the Draft General Plan during the public review period. The City also decided that the Draft EIR should be revised to address the changes in the Draft General Plan. This revised Draft EIR (hereafter called the Draft EIR or EIR) addresses the changes in the Revised Public Hearing Draft General Plan (hereafter called the Draft General Plan or Draft Plan). It also includes several additional analyses that were requested in several of the comment letters received on the original Draft EIR. All these comment letters as well as responses to these letters are included as Appendix C of this EIR (this Appendix is printed and bound as a separate document due to its length; it is on file with the Novato Community Development Department). Most of the changes to the Draft General Plan are minor; the substantial changes are summarized in Section 2 of this Draft EIR.

This EIR has been prepared in compliance with State EIR guidelines. It has been compiled from a number of sources including existing maps and studies, aerial photos, field investigations, and communications with various individuals. The information contained in this report is considered to be accurate, but it is subject to review and comment by the City, other responsible agencies, and the public. The public is invited to review the document and direct any comments on the EIR to Mr. Paul Bickner, Department of Community Development, City of Novato, 901 Sherman Avenue, Novato 94945. The public will also have the opportunity of delivering verbal comments at Public Hearings on the Draft EIR.

All written and verbal comments submitted by governmental agencies and the public will be responded to by the EIR consultants under guidance provided by the Lead Agency. The comments and responses, in addition to any EIR text revisions evolving from the public input process, when added to this Draft EIR will become the Final EIR for the project. The City will review this document to determine that it meets the criteria set forth in CEQA. Once the City Planning Commission and the City Council are satisfied that this EIR meets those criteria, the City Council will certify that the EIR is legally adequate per CEQA. Once the EIR is certified, then the City can take action to adopt a new General Plan

1.2 SCOPE OF THE ENVIRONMENTAL IMPACT REPORT

This EIR is a Program EIR. It has been prepared pursuant to State *CEQA Guidelines* Section 15168 of the *CEQA Guidelines*. Section 15168 of the Guidelines state:

(a) General. A program EIR is an EIR which may be prepared on a series of actions that can be characterized as one large project and are related either:

- (1) Geographically,*
- (2) As logical parts in the chain of contemplated actions,*
- (3) In connection with issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program, or*
- (4) As individual actions carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which can be mitigated in similar ways.*

The Draft Novato General Plan provides a framework for future decisions and actions that affect development in the city and its sphere of influence. It is a policy document rather than a proposal for a specific development action. Consistent with its policy function, the Draft Plan contains a full set of programs that should be implemented to achieve the Plan's goals. This EIR addresses the environmental impacts at a level of detail appropriate for a planning document. Future development proposals within the city will continue to be subject to specific project-level CEQA review as well as be evaluated for consistency with the General Plan.

The "Program" assessed in this Draft EIR is the City's land use regulatory scheme, including the review, control, and (occasionally) encouragement or support of development of the land within its jurisdiction. It will ultimately include the General Plan, zoning ordinances, zoning district maps, specific plans (in some cases), development agreements, subdivisions, and other entitlements for development of property.

It is recognized that future development allowed per the Draft General Plan will result in various impacts on the environment. Many of these areas of impact and concern are addressed by policies and implementation programs incorporated into the Draft Plan. In some cases, specific policies were adopted to mitigate potential future impacts. This integration of mitigations in the Draft Plan helps ensure environmental protection in the

city. In subsequent sections of this EIR, a distinction is made between mitigations included in the Draft Plan and additional mitigations recommended in the EIR.

Potential impacts have been identified and evaluated as regards existing conditions. A comparison of these impacts with impacts from potential development that could occur under the existing General Plan (the 1981 General Plan plus subsequent amendments) is included in the Project Alternatives chapter. Impacts from five additional alternatives are also discussed and compared in that chapter.

It is important to note that this is a program EIR and not an EIR on site-specific impacts that could result from development on particular properties in the City. Site-specific analyses and mitigations must be assessed at the time there is a development application. City staff and the General Plan consultants did identify a number of large parcels with development potential when preparing the Draft General Plan and the alternatives. This EIR addresses these sites in assessing impacts and the utility of mitigation measures. However, this analysis is not a detailed assessment of these major development sites. Site-specific analyses will be required for each of these sites; these future analyses will be based on site surveys for environmental resources and constraints as well as on the actual development proposal submitted for the site. This EIR addresses the cumulative effects of buildout of these sites plus infill development of other sites in the City and its Sphere of Influence. This approach is consistent with the degree of specificity required by CEQA for such EIRs. The *CEQA Guidelines* Section 15146 state:

The degree of specificity required in an EIR will correspond to the degree of specificity involved in the underlying activity which is described in the EIR.

- (a) An EIR on a construction project will necessarily be more detailed in the specific effects of the project than will be an EIR on the adoption of a local general plan or comprehensive zoning ordinance because the effects of the construction can be predicted with greater accuracy.*
- (b) An EIR on a project such as the adoption or amendment of a comprehensive zoning ordinance or a local general plan should focus on the secondary effects that can be expected to follow from the adoption or amendment, by the EIR need not be as detailed as an EIR on the specific construction projects that might follow.*

1.3 CONTENTS OF THE ENVIRONMENTAL IMPACT REPORT

The Draft General Plan contains the goals, policies, and programs designed to guide the physical development of the City of Novato. A number of technical and background reports were prepared to provide the data necessary to prepare this Plan. These reports contain detailed background information. This EIR relies on the Draft General Plan and the related technical reports. All these reports are herein incorporated by reference per Section 15150 of the *CEQA Guidelines*. All these reports are on file with the City of Novato Community Development Department (901 Sherman Avenue, Novato). They include:

1. *Issues Report for the General Plan Revision* (Marjorie Macris/PAS & Associates, June, 1993).

2. *Fiscal Issues Report - Novato General Plan Update* (Mundie & Associates, June, 1993).
3. *Economic Issues Background Report - Novato General Plan Update* (Mundie & Associates, June, 1993).
4. *Economic Evaluation and Strategy Report - Novato General Plan Update* (Mundie & Associates, June, 1993).
5. *Evaluation of General Plan Alternatives: Circulation Issues - Novato General Plan* (DKS Associates, December, 1993).
6. *Plan Alternatives Report for the General Plan Revision* (Marjorie Macris/PAS & Associates, January, 1994).
7. *Existing Conditions Report, City of Novato General Plan Revision* (The Planning Center and revised by City Staff in April, 1995).

This EIR is organized into five chapters. Chapter 1, Introduction, provides an overview of the EIR. It contains an index of EIR issues and describes the location of corresponding information between the EIR and the Draft General Plan and associated technical reports.

Chapter 2, Project Description, presents a description of the basic elements of the Plan.

Chapter 3, Summary, discusses major issues and summarizes the Plan impacts and mitigation measures. A summary of the comparison of Plan alternatives is presented. A summary impact table is included.

Chapter 4, Environmental Impact Analysis, describes the environmental setting, environmental impacts, and mitigations. The description of impacts assumes implementation of the Draft General Plan's goals, policies, and programs.

Chapter 5, Impact Summaries and Topical Issues, describes Plan alternatives and assesses impacts for the alternatives. Alternatives are compared, and the environmentally superior alternative is identified. This chapter includes a discussion of growth-inducing impacts. It includes a number of impact summaries and other discussions required by CEQA.

1.4 COMPLIANCE WITH CEQA REQUIREMENTS FOR DISTRIBUTION, NOTIFICATION, AND PUBLIC COMMENT

Notice of Preparation

Publication of a Notice of Preparation (NOP) is required by CEQA once an Initial Study has determined that an EIR will be prepared. After the NOP is published and distributed, there is a 30-day review period for public agencies and individuals to express their concerns about the information that will be contained in the EIR.

A Notice of Preparation was issued by the City of Novato Community Development Department on February 24, 1995 and sent to federal, state, and local government agencies. The NOP, Initial Study, and responses to the NOP are included in this EIR as Appendix A.

Notice of Completion

A Notice of Completion of the revised Draft EIR was distributed to concerned public agencies and to individuals potentially interested in the Plan.

Distribution of the Draft EIR

A public review period of 45 days is provided for this revised Draft EIR. This review period began on the publication date of the Draft EIR. During the public review period, the Novato Planning Commission will hold at least one public hearing on the revised Draft EIR. In addition, public agencies and interested individuals may submit written comments to the Novato Community Development Department. As noted previously, the original EIR on the original Draft Plan went through a public review period. Comments submitted on that original EIR and responses to those comments are included in Appendix C of this EIR, a separately-bound volume that is on file with the Novato Community Development Department.

Certification of the Final EIR

Once the public comment period on the revised Draft EIR has closed, a Final EIR will be prepared. The Final EIR will incorporate the revised Draft EIR and comments and responses to the original Draft EIR (Appendix C of the revised Draft EIR) by reference and consist of comments on the Draft EIR and responses to those comments. The Final EIR will be considered by the Novato Planning Commission. When the Commission considers it to be complete and accurate, it will recommend to the Novato City Council that it certify the document.

The Novato City Council will consider the Final EIR and may hold a public hearing on the EIR. When the Council is satisfied that the report is complete and accurate, it will certify the document. The Final EIR must be certified before the Plan can be adopted. After the City Council has certified the EIR and taken action on the Plan, the City will file a Notice of Determination with the State Office of Planning and Research and the Marin County Clerk.

1.5 INDEX OF EIR ISSUES AND LOCATION IN THE DRAFT GENERAL PLAN

As required by *CEQA Guidelines* Section 15166, the following is a guide to the location of all EIR content requirements set forth in Article 9 of the *CEQA Guidelines*. The documents listed below are incorporated herein in their entirety by reference. They may be obtained from the Novato Community Development Department, and they are available for review at the city library.

Location of Topics

Content Requirement

Location

Summary

EIR Chapter 3

Project Description

Project Area Map

EIR Chapter 2

Regional Map

EIR Chapter 2

Statement of Objectives

EIR Chapter 2

Technical Description

EIR Chapter 2
Draft General Plan

Environmental Setting

Existing Conditions Report

EIR Chapter 4

Land Use

Draft General Plan Housing Chapter

Draft General Plan Land Use Chapter

Existing Conditions Report

EIR Chapter 4

Visual Quality and Community Character

Draft General Plan Community Identity
Chapter

Existing Conditions Report

EIR Chapter 4

Content Requirement

Location

Open Space

Draft General Plan Environment

Chapter

Existing Conditions Report

EIR Chapter 4

Geology and Soils

Draft General Plan Safety and Noise

Chapter

Existing Conditions Report

EIR Chapter 4

Biological Resources

Draft General Plan Environment

Chapter

Existing Conditions Report

EIR Chapter 4

Hydrology and Drainage

Draft General Plan Land Use Chapter

Draft General Plan Environment

Chapter

Draft General Plan Safety and Noise

Chapter

Existing Conditions Report

EIR Chapter 4

Cultural and Archaeological Resources

Draft General Plan Land Use Chapter

Existing Conditions Report

EIR Chapter 4

Transportation and Circulation	Draft General Plan Transportation Chapter Existing Conditions Report EIR Chapter 4
Public Services and Facilities	Draft General Plan Land Use Chapter Draft General Plan Public Facilities Chapter Existing Conditions Report EIR Chapter 4
Air Quality	Draft General Plan Land Use Chapter Existing Conditions Report EIR Chapter 4
Noise	Draft General Plan Safety and Noise Chapter Existing Conditions Report EIR Chapter 4
Environmental Impact	
Potentially Significant Environmental Effects of the Project	EIR Chapters 3, 4, and 5
Significant Environmental Effects Which Cannot Be Avoided	EIR Chapters 3 and 5
Mitigations to Minimize Significant Effects	EIR Chapters 3 and 4
Alternatives to the Proposed Action	EIR Chapters 3 and 5
Relationship Between Short-Term Uses and the	
Maintenance and Enhancement of Long-Term Productivity	EIR Chapter 5
Significant Irreversible Environmental Changes	EIR Chapter 5
Growth-Inducing Effects	EIR Chapter 5
Cumulative Impacts	EIR Chapters 4 and 5
Effects Found Not to be Significant	EIR Chapters 3 and 4
Organizations and Persons Contacted	End of EIR

2.0 PROJECT DESCRIPTION

2.0 PROJECT DESCRIPTION

2.1 PLANNING AREA DESCRIPTION

The City of Novato is located at the north end of Marin County approximately 25 miles north of San Francisco, 20 miles east of the Pacific Ocean and 3 miles northwest of San Pablo Bay. The City is primarily served by U.S. Highway 101 from the north and south, and by State Route 37 from the east. Novato's city limits abut portions of both the Marin and Sonoma County lines, located at the centerline of the Petaluma River.

As shown in Figure 2, the City's Sphere of Influence (SOI) consists of approximately 36 square miles and includes the approximately 25 square miles contained within the City of Novato incorporated limits and additional areas that the City has identified as areas that may be annexed into the City at some future, undetermined date. The City of Novato is desirous of regulating the growth and conservation efforts that occur in this Sphere of Influence, and, as a result, will continue its physical planning efforts accordingly.

As described in the Introduction to the revised Draft Plan, the incorporated area and the Sphere of Influence comprise the Novato Planning Area referred to in the Draft Plan. A larger area was identified as Novato's Planning Area in the past, because of the City's interest in its watershed lands and activities outside the Sphere of Influence, including Redwood Landfill and Rancho Olompali. Some of the boundaries of special districts serving Novato also extend beyond the City's Sphere of Influence. The City's choice not to adopt land use designations and other policies for lands outside the Sphere of Influence does not signify a lack of interest in those areas. If the City chooses to adopt policies for a larger Planning Area in the future, a comprehensive study of the area would be necessary prior to a General Plan amendment. Studies sufficiently detailed to allow preparation of policies for a larger area were not conducted as part of the present General Plan revision. The policies of the *Marin Countywide Plan* apply in all lands outside the City Limits.

Novato is the second most populous of the eleven incorporated cities within Marin County. In 1990, there were 47,585 people living within Novato as compared to 230,100 in the County as a whole (population figures obtained from California Department of Finance, 1990).

2.2 GENERAL PLAN PURPOSE, OBJECTIVES, AND DESCRIPTION

The purpose of the Novato General Plan is to express the broad goals and policies and the specific implementation measures that will guide future growth, development, and conservation of resources. The *Existing Conditions Report* contains additional description of the City and its locale. That report also contains a lengthy discussion of how past General Plans were developed and the relationship between the current Draft General Plan and those past documents.

The general objective of the Draft General Plan is to clarify and update the existing components of the amended 1981 General Plan and land use map. Specific project Objectives are the thirteen General Plan Goals listed later in this section. Once adopted, the proposed plan will supersede the previously adopted 1981 Novato General Plan. The following summary of the major points contained within the Draft General Plan were taken directly from the Draft Plan. The following is a brief summary of the scope of the Draft Plan. Particular policies and programs will be referenced in the appropriate discussions of environmental impacts. However, the reader who wishes to have a full understanding of the scope of the Draft Plan should review the Draft Plan in its entirety.

The reader is also referred to several background reports that were prepared to assist in developing the Draft General Plan. These reports were listed in Section 1.3 above.

Geographic Scope of the Plan

The Plan establishes policies for all lands within the Novato City Limits. It also makes recommendations for unincorporated lands within the Novato Planning Area.

Time Horizon of the Plan

The Draft Novato General Plan establishes policies for the City at buildout, when all available land within the Sphere of Influence is developed to its maximum allowable extent. All public facilities and services are designed to support this amount of development. Because conditions and standards change, the City should review and, if necessary, revise the plan every five years, as recommended in the State's *General Plan Guidelines*.

Preparation of the General Plan

The City hired a General Plan consultant in 1991 to prepare the revised General Plan. These consultants prepared the *Preliminary Existing Conditions Database* report in February, 1992. This document contained information about the City's biological, cultural, and aesthetic resources; land use; socioeconomic conditions; transportation; environmental hazards; and public facilities and services. This original report was amended by City staff and issued as the *Existing Conditions Report* in 1995.

In January and February, 1992, the City conducted a General Plan Survey by mail, to obtain citizen input about issues facing the City. The questionnaire was mailed to 18,500 residences and 3,000 businesses; 3,400 responses were returned. In answer to the question about priorities for the future of the City, 85 percent rated "Protecting the quality of neighborhoods" as a "High Priority." "Preventing gridlock on the freeway" was rated high priority by 78 percent, "Preserving open space" by 76 percent, "Preserving the small town character of Novato" by 71 percent, and "Safeguarding the wetlands, ridgelines, creeksides, and oak woodlands" by 71 percent.

The survey findings, together with a series of neighborhood workshops and public hearings, provided the basis for the preparation of *Vision and Goals for Novato* (included in the Draft General Plan).

Problems with the original consultant led the City to hire new planning consultants in October, 1992 who began work in the spring of 1993.

The June, 1993 *Issues Report for the Novato General Plan Revision* described the significant areas of concern for the City's future: Community Character, Growth and

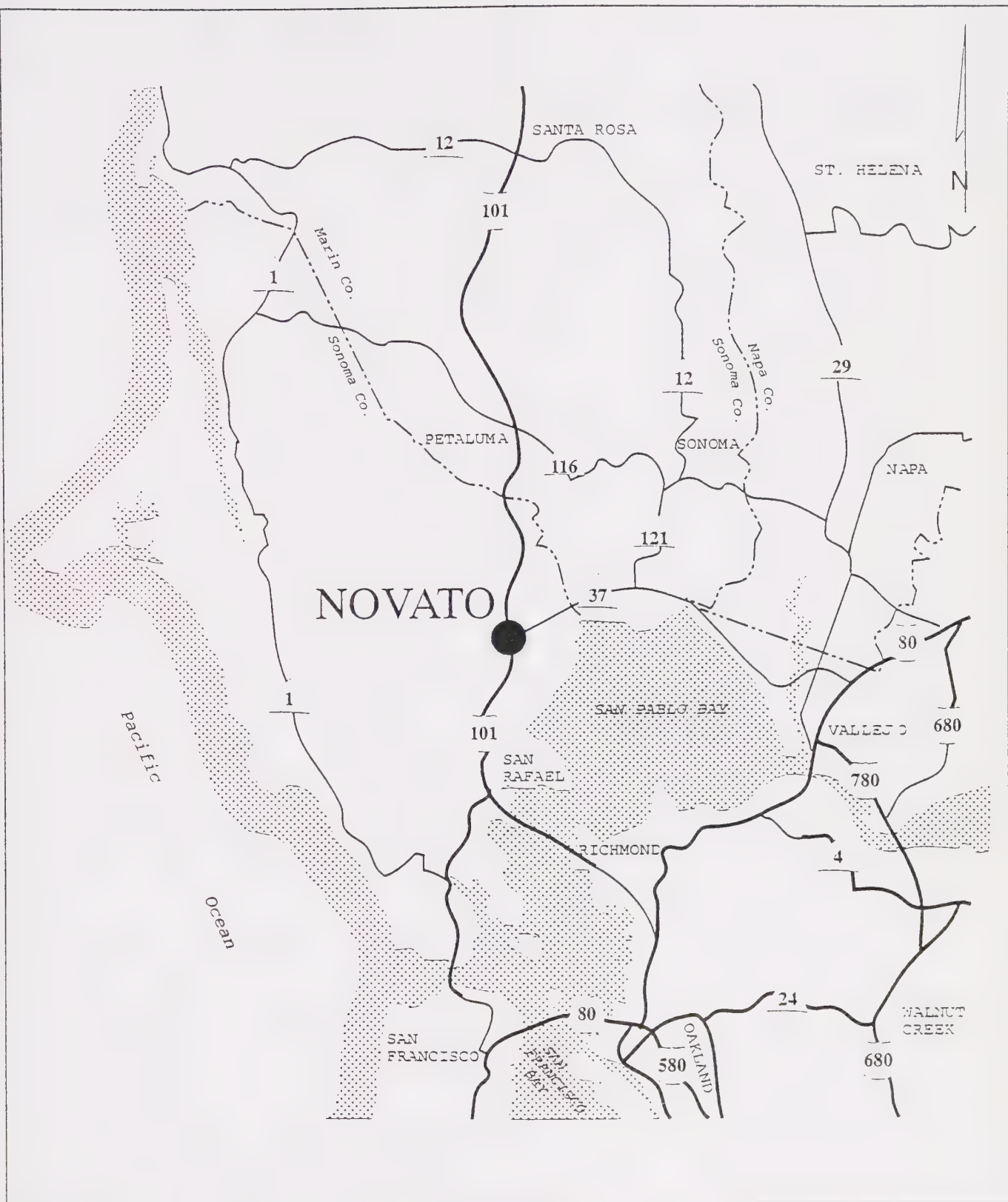


FIGURE 1 REGIONAL LOCATION

CITY OF NOVATO GENERAL PLAN
ADMINISTRATIVE DRAFT
ENVIRONMENTAL IMPACT REPORT
(Revised and Recirculated November, 1995)

FIGURE 2

PLANNING AREA



Scale: 1" = 5000' +



City Limit Line



Sphere of Influence

City of Novato General Plan Revision
Draft
Environmental Report

Revised & Recirculated
November, 1995

6. Preserve bay front lands and diked wetlands for agriculture, resource restoration, conservation and recreation.
7. Increase job opportunities and income of residents by encouraging a diversified local economy. Foster the economic vitality of Novato businesses, the City of Novato and other local governmental agencies by encouraging a healthy economy which provides for diversity of economic enterprises.
8. Provide for a variety of housing opportunities through new construction and maintenance of existing housing for an economically and socially diverse population, while preserving the character of the community. Low and moderate income housing of all types (including mobile homes, mobile home and recreational vehicle parks) will be given special consideration.
9. Coordinate transportation, economic and land use planning to help provide effective transit services which reduce dependence on the single-occupant automobile.
10. Encourage local job opportunities to avoid the need to commute out of Novato for employment.
11. Manage growth by requiring the coordination of development with adequate infrastructure, public facilities, public services and promoting conservation, reuse and recycling strategies while meeting the needs of the community with the limited land available for development.
12. Provide and maintain greater recreational, educational (including IVC) and cultural opportunities for all segments of the community. Pursue all efforts with community and neighborhood organizations, nonprofit organizations, for profit organizations, and public agencies to provide care and services, including medical, counseling, recreational, educational, cultural, shelter, and housing opportunities to meet the needs of Novato's citizens.
13. Protect the integrity of residential neighborhoods from conversion and/or intrusion of incompatible land uses. Create transition buffers separating incompatible land uses.

These goals were not changed when the Draft Plan was revised.

General Plan Chapters

The Draft General Plan includes ten chapters. These chapters incorporate the various elements that State law requires as well as several optional elements. The following table describes where each required and optional element is contained in the General Plan.

Table 1

Relation of Draft General Plan Chapters to State-Mandated Elements

Mandated Elements

Land Use Element
Circulation Element

General Plan Chapter

Land Use Chapter
Transportation Chapter

Housing Element
 Conservation Element
 Open Space Element
 Safety Element
 Noise Element

Housing Chapter
 Environment Chapter
 Environment Chapter
 Safety and Noise Chapter
 Safety and Noise Chapter

Some of the more important objectives, policies, and programs for each chapter are outlined in the following subsections. Specific policies and programs will be described in subsequent analyses of environment factors (in Chapter 4 of this Draft EIR).

Chapter 1 - Land Use

The Land Use Chapter designates the general distribution and intensity of uses of land for housing, business, industry, open space, education, public buildings and grounds, and other categories of public and private uses. It specifies standards of population density and building intensity in the various land use categories.

This Chapter is the primary statement of how land in Novato should be used, or reused in the event of redevelopment. It therefore sets the framework for all other elements in the plan, all of which must be consistent with each other.

The proposed land use designations for the City are shown on large format maps that are on file with the City Community Development Department (this map contains too many different land use categories to reproduce at the 11"x17" format used in this report; the map would be illegible at this scale). This map is also included in the Draft General Plan (in the pocket of that plan). It is circulated simultaneously with this EIR and can be referred to in reviewing this EIR. Table 2 below summarizes the buildout that could occur if all properties within the City's Sphere of Influence are developed.

Table 2

Maximum Buildout Potential for the Draft General Plan

<u>Development Type</u>	<u>Existing Units or Square Feet</u>	<u>Added Development Possible Under Draft General Plan</u>	<u>Maximum Total Buildout Possible Under Draft General Plan</u>
Residential Total	21,044 Units	5,642 Units	26.686 Units
Industrial	135,549 sq. ft.	1,312,729 sq. ft.	1,448,278 sq. ft.
Commercial	6,207,352 sq. ft.	3,299,803 sq. ft.	9,507,155 sq. ft.
Office	1,138,793 sq. ft.	1,129,562 sq. ft.	2,268,355 sq. ft.
Non-Residential Total	7,481,694 sq. ft.	5,742,094 sq. ft.	13,223,788 sq. ft.

Source: Marjorie W. Macris/PAS & Associates; Novato Community Development Department

A portion of the buildout potential described in Table 2 would occur in areas currently outside the City Limits. Table 3 shows the residential buildout potential for that portion of the Planning Area that is within the current City Limits and that portion that is outside the City Limits but within the Sphere of Influence.

Table 3
**Residential Buildout Potential Within the City and
 Within the Sphere of Influence**

<u>Residential Units</u>	<u>Number Within City Limits</u>	<u>Number Within Sphere of Influence</u>
Existing	19,078 Units	1,966 Units
Potential Under Draft Plan	5,079	563
Total Buildout	24,157	2,529

Source: Marjorie W. Macris/PAS & Associates; Novato Community Development Department.

The objectives of the Land Use Chapter include:

- LU Objective 1 Promote development and conservation of land in Novato in the pattern shown on the Land Use Designations Map.*
- LU Objective 2 Allow development consistent with infrastructure and adequate public services.*
- LU Objective 3 Assure that development recognizes environmental constraints.*
- LU Objective 4 Establish clear limits to urban development outside the Novato City Limits.*
- LU Objective 5 Establish effective coordination of planning efforts among interrelated jurisdictions and special authorities to implement the General Plan.*

In developing land uses for the City and SOI, particular attention was given to the fact that the capacity of the transportation system (including funded improvements) is inadequate to accommodate the amount of growth that would be allowed per the existing 1981 General Plan. Buildout projections were calculated by City staff and the General Plan consultants to take into account constrained portions of properties (constraints included wetlands, excessive slopes, and other environmental considerations).

The Draft General Plan establishes 22 land use categories which are shown on the General Plan Land Use Designations Map. This map has too many categories to reproduce on the smaller map used in this report. It is on file with the Novato Community Development Department. These designations determine the standards of population density and building intensity. Intensity of residential uses shall be based on units per acre as permitted on the Land Use Designations Map which is included in the Draft General Plan which is distributed with this Draft EIR.. The population density is based on 2.64 persons per household.

For non-residential designations, building intensity is defined by Floor Area Ratio (FAR). The uses listed are illustrative but not exclusive. Detailed descriptions of land uses permitted in each designation are defined by the Zoning Ordinance.

The Draft General Plan establishes designations for land both in the City and outside the City Limits but within the Novato SOI as defined by the County's Local Agency Formation Commission (with two additions as described below). The Sphere of Influence is the ultimate physical boundary of the City.

The Draft General Plan indicates a number of land use changes from the 1981 plan. The new map is parcel-specific. The new plan adds two new Residential categories, reduces and simplifies the number of Office categories, and adds the categories of Downtown Core, Commercial/Light Industrial, Mixed Use, Parkland, Public Utilities, Research/Educational, Open Space, and Agriculture.

Significant policies, programs, and directions of the Land Use Chapter include:

1. The existing SOI will be maintained except for two additions: the property where the Buck Center on Aging is proposed and a portion of the St. Vincent's property in the southeast corner of the City. Future urban development will be restricted to areas within the SOI. The City will work with the County to ensure suitable development within unincorporated areas within the SOI.
2. Growth will be reviewed regarding adequate public infrastructure. Each new development project will be reviewed for its effect on infrastructure and public services.
3. Agricultural lands are designated for low residential densities (1 unit per 60 acres) to promote continued agricultural use.
4. Low densities are designated for lands located within the historic shoreline of San Francisco Bay east of Highway 101 (i.e., wetlands or diked baylands). Restricted use in this area recognizes agricultural use of many of these lands, their biotic resource value, their value as an open space aesthetic resource, and flooding and geologic constraints.
5. Development proposals on sites which are environmentally sensitive (i.e., have wetlands, habitat used by sensitive biotic species, scenic resources, native woodlands, fire hazards, flood hazards, and/or unstable slopes) must include a Constraints Analysis. This Constraints Analysis must identify and map sensitive resources and identify how those resources will be avoided if the site is developed. If avoidance is not feasible, then the Constraints Analysis shall identify how the resources loss shall be mitigated.
6. Residential densities are designated to reflect existing neighborhood character, site constraints, and potential for meeting housing goals. The following residential land use designations apply:

Residential

Rural Residential: up to 0.49 dwelling unit per acre. Permitted uses are detached single-family dwellings, limited agricultural uses, processing of agricultural products, and other similar uses.

Very Low Density Residential: 0.5 to 1 dwelling unit per acre. Permitted uses are detached single-family dwellings, recreation, home occupations, community facilities, and other similar uses.

Low-Density Residential-A: 1.1 to 4 dwellings per acre. Permitted uses are detached single-family dwellings, recreation, home occupations, community facilities, and other similar uses.

Low Density Residential-B: 1.1 to 5 dwelling units per acre. Permitted uses are detached or attached single-family dwellings, recreation, home occupations, community facilities, and other similar uses.

Medium Density Residential - A: 4.1 to 7 dwellings per acre. Permitted uses are detached or attached single-family dwellings, recreation, home occupations, community facilities, and other similar uses.

Medium Density Residential - B: 5.1 to 10 dwelling units per acre. Permitted uses are two-family dwellings, detached or attached single-family dwellings, recreation, home occupations, community facilities, and other similar uses.

Medium Density Multiple Family Residential: 10.1 to 20 dwelling units per acre. Permitted uses are multiple-family dwellings, two-family dwellings, detached or attached single-family dwellings, recreation, home occupations, community facilities, and other similar uses.

High Density Multiple Family Residential: 20.1 to 30 dwelling units per acre. Permitted uses are multiple-family dwellings, two-family dwellings, limited commercial uses to serve building residents, detached or attached single-family dwellings, recreation, home occupations, community facilities, and other similar uses.

7. The following non-residential land use designations are included.

Non-Residential

Business and Professional Office: This designation provides for office activities, including office campuses, research and development activities, hospitals, and administrative, medical, dental, and business offices, with ancillary commercial and service establishments, and other similar uses. Maximum Floor Area Ratio is 0.4.

General Commercial: This designation is for established commercial areas with off-street parking and/or clusters of streetfront stores; regional and local-serving retail establishments; specialty shops, banks, professional offices; motels; business and personal services; and other similar uses. This designation is typically assigned to larger parcels, located on a major arterial street. Maximum Floor Area Ratio is 0.4.

Neighborhood Commercial: This designation is for established neighborhood shopping areas, to meet the retail and service needs of nearby residents. This land use designation allows a variety of retail stores, and personal services such as grocery stores, dry cleaners, professional and administrative offices, restaurants, and other similar uses. Multi-family housing integrated with commercial uses is permitted. . Maximum Floor Area Ratio is 0.4, with an increase to 0.6 if housing is included, provided the difference between FAR of 0.4 and 0.6 is used for housing.

Downtown Core: This designation will be used for part of the Downtown Specific Plan area. It permits office, commercial, and retail uses, mixed commercial/residential use with commercial uses located principally on the ground floor, and other similar uses. Maximum Floor Area Ratio is 0.4 for commercial uses with a maximum of 1.0 for mixed uses where the difference between 0.4 and 1.0 is used for housing.

Commercial/Light Industrial: This designation applies to the area north of Grant Avenue and east of Redwood Boulevard, which now contains a mixture of commercial, construction-related, and light industrial uses. The intent of the designation is to encourage existing businesses to remain and make improvements. A wide range of commercial and light industrial uses, including manufacturing, wholesale, service and processing and other similar uses that do not generate excessive adverse environmental impacts, are permitted. Maximum Floor Area Ratio is 0.4.

Mixed Use: This designation permits office, commercial, and retail uses and residential uses. It applies to sites where the surrounding area is currently developed with both commercial and residential land uses. The combination and intensity of land uses shall be compatible with the development pattern and character of the surrounding neighborhood and existing adjacent land uses. The maximum Floor Area Ratio for commercial uses is 0.4, with the maximum residential densities shall be compatible with the developed residential densities of the contiguous neighborhood.

Light Industrial: This designation provides for a wide variety of manufacturing, wholesale, service, and processing uses that do not generate excessive adverse environmental impacts. Other uses permitted include offices ancillary to industrial uses; warehousing and agricultural products sales and services; auto sales and repair; food and drink processing; local serving retail; and other similar uses. Maximum Floor Area Ratio is 0.4.

Research/Education-Institutional: This designation permits a mix of medical research, educational, and laboratory uses, with related multi-family residential, recreational, office and commercial and other similar uses in a campus or open space setting. Maximum Floor Area Ratio is 0.2, and the maximum residential density is 1 (one) unit per acre of gross land area. Clustering of multi-family housing is permitted.

Conservation: This designation applies to privately-owned land that is mainly unimproved. Permitted uses are agriculture, preservation of natural resources, outdoor recreation, and other similar uses. Examples include bayfront, watercourse, and hillside areas. Maximum densities range from 1 dwelling unit per 10 acres (Con-10) within the City to 1 dwelling unit per 60 acres (Con-60) outside the City.

Agriculture: This designation is intended to protect, preserve and enhance agricultural uses. Permitted uses include agriculture; greenhouses; farm and ranch buildings; single family dwellings; horse stables; fishing and hunting clubs; flood control facilities; animal hospitals; and institutional uses for educational, scientific, recreational, or religious purposes, related to the primary agricultural use of the property. Maximum residential density is 1 dwelling unit per 60 acres.

Open Space: This designation applies to publicly-owned land that is largely unimproved and devoted to the preservation of natural resources, outdoor recreation, floodways and flood control, and the maintenance of public health and safety.

Parkland: This designation applies to existing and undeveloped active and passive parks, recreation areas, and community playfields. Permitted uses include shelters, rest rooms, storage sheds, other structures needed to accommodate public use or provide for maintenance of the land, and cultural and recreational facilities.

Community Facilities and Civic Uses: This designation includes public buildings, recreation and cultural facilities, museums, public libraries, City offices, fire and police stations, hospitals, and privately-owned uses operating in conjunction with public uses. Maximum Floor Area Ratio is 0.25.

Public Utilities: This designation includes utility facilities, transformer stations, water and sewage treatment plants, and related easements. Maximum Floor Area Ratio is 0.25.

8. The land use designations are shown on the Land Use Designations Map which is on file with the Novato Community Development Department and is also located in the Draft General Plan.
9. Table 4 shows the acreage within the Sphere of Influence for each land use designation. It is noted that 12,430 acres of the total 22,534 acres, or 55 percent of the area, is designated for agriculture, conservation, parkland, or open space.
10. Development per the land use designations outlined above will be allowed if the development is consistent with environment and infrastructure constraints as outlined in the General Plan. Development will be required to pay its fair share of necessary improvements to the infrastructure.
11. Novato will continue to coordinate planning decisions with the County of Marin as well as other regional and special districts.

Table 4
Acres for Each Land Use Designation

<u>Land Use Designation</u>	<u>Acres</u>
Agriculture	80
Rural Residential	30
Very Low Density Residential	2,460
Low Density Residential "A"	4,470
Low Density Residential "B"	170
Medium Density Residential "A"	22
Medium Density Residential "B"	540
Medium Density Multiple Family Residential	275
High Density Multiple Family	50
Business and Professional Office	180
General Commercial	450
Neighborhood Commercial	50
Commercial/Light Industrial	22
Mixed Use	20
Downtown Core	30
Light Industrial	430
Research/Education	460
Conservation (1 unit per 60 acres)	3,300
Conservation (1 unit per 10 acres)	860
Open Space	7,940
Parkland	250
Community Facilities and Civic Uses	380
Public Utilities	65
Total	22,534

Source: Marjorie M. Macris/PAS & Associates

Changes in the Land Use Chapter From the Original Draft Plan

In revising the Draft Plan, much of the introductory section was re-ordered, but these changes do not affect Plan policies or programs. Major changes include:

1. The method of presenting land use designations was changed, but these changes did not alter the basic definition of land use types nor their arrangement on the Land Use Designations Map.
2. Policies and programs related to growth management were restructured. A primary change was that the policies now include a direct linkage between the ability of

public service agencies to provide services and facilities and the City's responsibilities for approving development. In the original Draft Plan, this linkage was vague, and the original EIR recommended the changes to Land Use Policies 7 and 8 that have been incorporated in this revised Draft Plan.

3. Another major change is that the policies requiring a Constraints Analysis (LU Policy 9) for projects proposed on lands with sensitive resources have been moved from the Environment Chapter to the Land Use Chapter.
4. Policies encourage clustering of development and ensuring compatibility with surroundings have been moved within the chapter.

Chapter 2 - Transportation

The Transportation Chapter discusses transportation issues for the Novato Planning Area. It briefly describes the existing circulation system and travel characteristics, projects future traffic based on the buildout of the land uses described in the *Land Use Chapter*, and identifies the resulting anticipated roadway deficiencies. In addition, this Chapter takes into account the traffic impact of anticipated development in Marin County and the roadway improvements adopted in the Marin County Congestion Management Plan's network. Policies and implementation programs contained in this chapter provide a guide for decisions regarding transportation system improvements to accommodate Novato's anticipated growth.

The *Transportation Chapter* is based on several underlying themes and findings. They are:

1. Transportation is both a local and a regional problem. Effective improvements to the transportation system depend on the cooperative effort of other agencies such as the State of California, Marin County, adjacent cities and counties, the Metropolitan Transportation Commission, and public transit districts.
2. Land use and transportation are inextricably connected. They must be coordinated so that future development and transportation will be balanced with each other. The land use and growth management policies in this Plan reflect this relationship.
3. Single-passenger automobiles have strained the inter-city transportation system. Highway 101 is the main inter-city roadway that is at capacity. This situation will only worsen unless transportation service levels are improved and greater emphasis is placed on alternatives to the single-occupant automobile, such as bus and rail transit, bicycling, and ridesharing. Reducing the demand for travel through growth management to ensure that future development does not exceed the capacity of the transportation system is essential.
4. Transportation facilities must serve all sectors of the community – seniors, children, the disabled and those who depend on public transportation.
5. Future improvements to the transportation system must complement and support the other goals and objectives of the General Plan.
6. Minimizing the intrusion of through-traffic onto local streets is essential to avoid overloading local streets. As congestion on Highway 101 increases, more traffic may divert onto Redwood Boulevard, South Novato Boulevard, Sunset Parkway and Ignacio Boulevard.

7. Providing efficient routes for transit service, emergency and other service vehicles continues to be a high priority for the City.

Objectives of this Chapter include:

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|------------------------|---|
| <i>TR Objective 1</i> | <i>Help reduce regional traffic growth.</i> |
| <i>TR Objective 2</i> | <i>Improve and manage the City's roadway system to accommodate future growth and maintain acceptable levels of service.</i> |
| <i>TR Objective 3</i> | <i>Ensure that the transportation system contributes to the quality of life of the community</i> |
| <i>TR Objective 4</i> | <i>Develop a circulation system that is safe and efficient.</i> |
| <i>TR Objective 5</i> | <i>Reduce dependence on the automobile.</i> |
| <i>TR Objective 6</i> | <i>Make it easier and safer for people to travel by bicycle and on foot.</i> |
| <i>TR Objective 7</i> | <i>Provide access to transportation for persons who are mobility-impaired.</i> |
| <i>TR Objective 8</i> | <i>Reduce travel demand.</i> |
| <i>TR Objective 9</i> | <i>Promote balanced funding for transportation systems.</i> |
| <i>TR Objective 10</i> | <i>Provide airport service consistent with Novato's community character.</i> |

There are numerous policies and programs to achieve these objectives. Some of the more important of these are summarized below.

1. Recognizing that traffic is a region-wide problem, coordinate transportation planning with other agencies including the Marin County Congestion Management Agency, the County of Marin, Golden Gate Bridge Highway and Transportation District, and the Metropolitan Transportation Commission.
2. Ensure that new development can be adequately served by transportation facilities. The Plan establishes minimum Levels of Service for various intersections:
 - a) At intersections: operation at LOS D for signalized intersections and four-way stop controlled intersections.
 - b) For side street operations with stop sign control: LOS E, except where side streets have very low traffic volumes, in which case LOS F conditions may be acceptable and may not warrant mitigation.
3. The traffic impacts of new development will be assessed, and new development will contribute its fair share to necessary traffic improvements.
4. There are numerous policies and programs aimed at reducing the dependence on the single-occupant vehicle and dependence on cars in general. This includes a commitment to completing a bicycle and pedestrian trail system.

5. The Plan includes extension of an HOV lane north to Atherton Avenue. It also includes the potential connection of the Bel Marin Keys industrial area with Highway 37. It includes construction of other intersection improvements when necessary.
6. Travel demand is decreased by continuing to implement the Trip Reduction Ordinance, incentives for employers to develop facilities for non-auto using employees, and providing for high density residential development adjacent to public transit.
7. Policies are included to ensure safety and ensure that the transportation system contributes to the quality of life in the community.

Changes in the Transportation Chapter From the Original Draft Plan

The major changes in this chapter include:

1. The Levels of Service standards for intersections have been changed in TR Program 4.1 so that LOS F conditions for side street operations at unsignalized intersections where there is very low volumes is acceptable. Also, the LOS standards for streets have been eliminated so that the revised Draft Plan contains LOS standards only for intersections.
2. The policy to reduce through traffic on local streets (old Policy 10 and attendant programs) has been eliminated.

Chapter 3 - Housing

This Chapter provides policies and programs to allow Novato to meet its fair share of regional housing needs and to provide housing for the various demographic groups in the City. Specific objectives include the following:

Objective 1 Conserve and improve Novato's existing housing supply.

Objective 2 Diversify and expand housing opportunities.

Objective 3 Expand housing opportunities for the disabled, households with very-low to moderate incomes and for persons with special housing needs.

Objective 4 Promote fair and equal housing opportunities .

The Draft General Plan would allow buildout within the Sphere of Influence of up to 5,642 new dwelling units to house future residents. To provide more affordable housing, the Draft General Plan increases the amount of land designated high density. Table 5 illustrates that many of the potential new structures will be multi-family (i.e., the "high density" designation) and that there is the potential for attached or small lot single-family units (a portion of the "medium density" designation).

Table 5

Number of Units By Housing Type

<u>Housing Type</u>	<u>Draft General Plan Land Use Designation</u>	<u>The Number of Additional Units Possible</u>
Residential; Low Density	Conservation 10 and 60; Rural Residential; Very Low Residential	1,002
Residential: Low-Medium Density	Low Density Residential A and B	1,983
Residential: High-Medium Density	Medium Density Residential (R4 and R5)	1,365
Residential: High Density	Medium Density Multiple Family; High Density; Mixed Use; Neighborhood Commercial	1,292
Total		5,642

Source: Novato Community Development Department (April, 1995) and Marjorie W. Macris/PAS & Associates

Consistent with State law, the Housing Chapter contains policies and programs aimed at facilitating second units, affordable housing, senior housing, and housing for individuals with special needs.

Changes in the Housing Chapter From the Original Draft Plan

A number of technical changes have been made in several policies and programs. None of these changes affect the environmental analysis that was conducted for the original Draft EIR nor this revised Draft EIR.

Chapter 4 - Environment

The Environment Chapter combines the requirements for the conservation element and the open space element mandated by State planning law. This chapter addresses the conservation, development, and use of natural resources, including streams and other waterways, soils, woodlands, hillsides, ridgelines, wildlife habitats, and mineral deposits. It also plans open space for preservation and the managed production of natural resources, for outdoor recreation, and for public health and safety.

The Environment Chapter is correlated with the Land Use Chapter which also addresses suitable uses of land and preservation of open space areas.

The basic objectives of this Chapter include:

- EN Objective 1 Preserve, protect, and enhance streams and other bodies of water.*
- EN Objective 2 Preserve, protect, and enhance wetlands.*
- EN Objective 3 Preserve, protect, and enhance bayfront areas.*
- EN Objective 4 Preserve, protect, and enhance wildlife habitat.*
- EN Objective 5 Protect continued agricultural use.*

<i>EN Objective 6</i>	<i>Preserve, protect, and enhance native woodland areas.</i>
<i>EN Objective 7</i>	<i>Protect visual values on hillsides, ridgelines, and other scenic resources.</i>
<i>EN Objective 8</i>	<i>Reduce dependence on non-renewable energy and materials.</i>
<i>EN Objective 9</i>	<i>Work to protect and improve air quality.</i>
<i>EN Objective 10</i>	<i>Preserve, protect, and enhance water resources.</i>
<i>EN Objective 11</i>	<i>Reduce the volume of solid waste generated by the City.</i>
<i>EN Objective 12</i>	<i>Protect mineral resources.</i>
<i>EN Objective 13</i>	<i>Preserve open space for the protection of natural resources.</i>
<i>EN Objective 14</i>	<i>Provide an attractive and comprehensive system of parks and trails throughout the city to meet the recreational needs of all age groups and capabilities.</i>
<i>EN Objective 15</i>	<i>Improve and enhance cultural facilities opportunities in Novato.</i>

Some of the more significant policies and programs include:

1. The major streamcourses in Novato will be protected via a Watercourse Protection Overlay Zone. This prevents virtually all development within 50 feet of a streambank.
2. Lands that are located within the area that was once San Francisco Bay (including diked baylands) are afforded substantial protection by their inclusion in a new Bayfront Overlay Zone. The Draft Plan recognizes that lands within the Bayfront Overlay Zone have value for floodwater storage, aesthetics, and maintaining biotic diversity. It further recognizes that many of these lands are subject to flooding and underlain by bay muds that pose a significant risk during seismic events. As such, development on lands located below the historic San Francisco Bay line elevation (as mapped by Nichols and Wright, 1971) and on associated uplands is restricted.
3. Continued agricultural use is promoted for agricultural properties.
4. Rare, endangered, and sensitive biotic species are afforded protection.
5. Policies restrict development impacts on remaining native woodlands in Novato.
6. Visual resources of hillsides and ridgelines are protected.
7. The Draft Plan includes the full complement of policies and programs aimed at conserving Novato's resources, including archaeological, historical, air, water, mineral, and biotic resources.
8. The Draft Plan recommends additions to Novato's open space, parks, and trails consistent with recommendations in the *Marin Countywide Plan* and the City's *Target 2000* report.

Changes in the Environment Chapter From the Original Draft Plan

The major changes in the policies and programs of the Environment Chapter include:

1. A Wetlands Protection Overlay Zone is established to provide protection to wetlands (EN Policy 10). In the original Draft Plan, wetlands in the bayfront area or along major watercourses were provided protection, but protection for other wetlands was not clear. This problem has been remedied in the revised Draft Plan.
2. Public access to bayfront and other wetlands has been tempered by new wording that recognizes that access and recreation should not adversely affect wildlife (EN Programs 5.1 and 6.2 and EN Policy 12).
3. EN Policy 23 has been changed to provide protection for native woodlands whereas the original Draft Plan did not distinguish between native and non-native woodlands.
4. EN Policy 27 was changed to protect only visual values on hillsides and ridgelines whereas the original Draft Plan called for regulating development for both visual and environmental values. This is not a major change as environmental values on hillsides are addressed in other policies and programs
5. The policies requiring a Constraints Analysis for projects in lands with sensitive environmental resources was eliminated from this chapter and moved to the Land Use Chapter. The programs under this policy were basically retained.

Chapter 5 - Safety and Noise

The Safety section of the Safety and Noise Chapter mandates the protection of the community from unreasonable risks associated with the effects of earthquake, landslides, slope instability, subsidence and other known geologic hazards, flooding, and building collapse. This section is required to include a mapping of known seismic and other geologic hazards and also to address other locally relevant safety issues such as wildland and urban fires; flooding and storm drainage; and emergency response capacity.

A second purpose of this section is to guide land use planning and policy decisions to reduce the safety risks and achieve an acceptable level of public protection from known natural and man-made hazardous events.

The safety objectives cited in this Chapter include:

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| <i>SF Objective 1</i> | <i>Reduce seismic hazards.</i> |
| <i>SF Objective 2</i> | <i>Minimize the risk of personal injury and property damage resulting from slope and soil instability.</i> |
| <i>SF Objective 3</i> | <i>Reduce flood hazards.</i> |
| <i>SF Objective 4</i> | <i>Assure Emergency Preparedness.</i> |
| <i>SF Objective 5</i> | <i>Reduce fire hazards.</i> |

<i>SF Objective 6</i>	<i>Maintain effective police services.</i>
<i>SF Objective 7</i>	<i>Maintain an effective medical emergency response system.</i>
<i>SF Objective 8</i>	<i>Reduce hazards of transportation, storage and disposal of hazardous wastes and hazardous materials.</i>
<i>SF Objective 9</i>	<i>Reduce community exposure to electromagnetic field radiation.</i>
<i>SF Objective 10</i>	<i>Reduce aviation hazards.</i>

The policies and programs describe how the public will be protected from natural and social hazards. Development is restricted in areas with known hazards (e.g., unstable slopes, flood zones, areas with substantial earthquake risk). City programs to provide emergency response will be upgraded or maintained to provide necessary response to accidents and disasters.

Changes in the Safety Portion of the Safety and Noise Chapter From the Original Draft Plan

Most of the changes to policies and programs in this chapter were technical in nature and did not substantially affect the purpose of the policies and programs. The only major change includes:

1. The programs under SF Policy 31 regarding electromagnetic field radiation safety have been revised to require the City to consider EMF radiation and regulations whereas earlier programs contained stronger language requiring the City to adopt regulations setting standards for EMF levels and for minimizing and reducing EMF levels near sensitive areas.

Noise

The Noise section of this Chapter establishes noise and land use compatibility standards to be used in assessing future development proposals. The Chapter contains specific policies and programs to meet the following objectives:

- Objective 11* *Ensure compatibility of new development with existing and future noise levels.*
- Objective 12* *Prevent land uses which increase the existing noise level above acceptable standards or require mitigation to reduce noise to acceptable levels.*
- Objective 13* *Reduce noise to acceptable levels where it now exceeds those standards wherever possible.*

The Chapter includes a noise and land use compatibility table that shows allowable noise levels for new development. Specific policies and programs identify ways of maintaining and protecting existing noise environments and ensuring that new development is not subjected to adverse noise levels.

Changes in the Noise Portion of the Safety and Noise Chapter From the Original Draft Plan

The major change in the Noise section is that the revised Draft Plan eliminates a policy to reduce noise in existing residential areas where feasible as well as a policy to protect the existing noise environment in residential areas.

Chapter 6 - Economic Development and Fiscal Vitality

The Economic Development portion of this Chapter encourages a local economy that is sustainable; that is, which meets the essential human needs and values without compromising the ability of future generations to meet the same needs and values. The Chapter details methods of attracting new businesses and increasing jobs in Novato, especially jobs for residents of the City. Objectives include:

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| <i>EC Objective 1</i> | <i>Foster economic development.</i> |
| <i>EC Objective 2</i> | <i>Maximize the capacity for employment-generating uses in areas designated for non-retail business.</i> |
| <i>EC Objective 3</i> | <i>Encourage businesses that provide a variety of employment opportunities, targeting businesses that will employ Novatans.</i> |
| <i>EC Objective 4</i> | <i>Retain and attract businesses.</i> |
| <i>EC Objective 5</i> | <i>Revitalize the Downtown area.</i> |
| <i>EC Objective 6</i> | <i>Encourage sustainable local economic activity.</i> |

The Fiscal Vitality section of the Chapter contains objectives and policies to ensure that new development does not adversely affect City government or other public service providers. It includes the following objective.

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| <i>EC Objective 7</i> | <i>Focus future City policymaking on the relationship between workplace uses and Novato's fiscal condition.</i> |
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Changes in the Economic Development and Fiscal Vitality Chapter From the Original Draft Plan

Major portions of this chapter were revised. Changes include:

1. Several new policies are added to meet the objective of maximizing the capacity for employment-generating uses in areas designated for non-retail business (EC Policies 2-4).
2. New policies are added to meet the objective of encouraging businesses that provide a variety of employment opportunities (EC Policies 5-7).
3. Additional language is added to EC Policy 13 that requires the City to provide additional assistance to encourage targeted businesses moving to the City.
4. EC Policy 20 has been added which calls for reform of regulatory processes to foster a spirit of cooperation between business and local government.

5. EC Policies 21-24 have been added to promote compatible retail and commercial uses, attract shoppers, and maintain and expand Novato's existing retail base.

These changes do not substantially alter the environmental analysis conducted in the original Draft EIR.

Chapter 7 - Human Services

The Human Services Chapter is an optional element of the General Plan. Its purpose is to define ways that the City can better provide and coordinate delivery of services and facilities to the dependent members of the community. The Human Services Chapter outlines the City's commitment to services such as:

1. Care of senior citizens;
2. Child care;
3. Care of disabled people;
4. Home services;
5. Youth services;
6. Social programs;
7. Hospital services;
8. Other County programs.

The Human Services Chapter in part supplements the Housing Chapter of the General Plan, which addresses housing for those with special needs, such as the elderly, disabled, and homeless. The Human Services Chapter also correlates with the Transportation Chapter, which provides for transportation access for the elderly and mobility-impaired. Specific objectives include:

HS Objective 1 Identify and promote human services sufficient to serve Novato's residents with special needs.

HS Objective 2 Encourage a wide range of services for senior citizens, the disabled, the chronically ill, and others needing assisted care.

HS Objective 3 Promote provision of high quality and affordable child care facilities and services in Novato.

HS Objective 4 Provide services and programs addressing the recreational, social, cultural, and other similar needs of Novato's youth.

HS Objective 5 Support health care services that meet the needs of Novato.

Changes in the Human Services Chapter From the Original Draft Plan

There are no substantial changes made in this chapter.

Chapter 8 - Public Facilities and Services

This chapter of the Draft Plan contains policies and programs to ensure that new development can be adequately served by public services and infrastructure provided by the City.

PF Objective 1 Ensure that the development allowed in the General Plan is compatible with existing and planned public facilities.

Policies in this chapter require that public facilities be upgraded as needed to serve new development. The City will coordinate planning with other public agencies

Changes in the Public Facilities and Services Chapter From the Original Draft Plan

This chapter originally established specific Levels of Service (LOS) for each public service agency. The new chapter eliminates specific definitions of LOS. The new chapter requires the City to request that each public service provider issue a determination whether it can provide facilities and services to proposed new projects. These determinations will then be used in making determinations under LU Policy 7 that describes growth management in the City. The revised chapter leaves it to the public service agencies to determine the appropriate Level of Service. The revised chapter retains the approach of City support for other agencies to collect equitable fees necessary to supply adequate facilities and services. The changes do not substantively alter the growth management approach of the Draft Plan.

Chapter 9 - Community Identity

The purpose of this chapter is to establish objectives, policies and programs that will preserve and improve Novato's unique sense of place. Strengthening Novato's sense of community was given a high priority in the survey carried out for the General Plan and in public meetings. Suggestions included keeping the small town character, having more local events, and beautifying the Downtown. Residents and business people stated that there was a need for better-designed developments, maintaining the attractiveness of older, more traditional residential areas, and greater variety in residential development, in contrast to standard subdivision tracts.

The Chapter provides design guidelines for the comprehensive evaluation of development through site and landscape plans, architecture, lighting and parking facilities. These guidelines will influence how future development will look and feel and ensure that it will enhance Novato's unique character. Section II of the Chapter focuses on the Downtown. Section III deals with other aspects of the City which contribute significantly to its sense of place and identity – the conservation of archaeological and historic resources and public art. This Chapter includes the following objectives:

- CI Objective 1 Build on and strengthen Novato's unique identity and sense of place.*
- CI Objective 2 Preserve the character of existing residential neighborhoods.*
- CI Objective 3 Ensure that new residential development demonstrates quality, excellence of design, and sensitivity to the character of the surrounding neighborhood.*
- CI Objective 4 Encourage compact development that reduces the need for annexations and urban sprawl.*
- CI Objective 5 Improve the appearance and effectiveness of parking facilities.*

<i>CI Objective 6</i>	<i>Improve the appearance and effectiveness of outdoor lighting and reduce conflicts related to lighting.</i>
<i>CI Objective 7</i>	<i>Establish the Downtown as the primary center for community and cultural activities.</i>
<i>CI Objective 8</i>	<i>Establish the Downtown as a commercial and business center for the community.</i>
<i>CI Objective 9</i>	<i>Provide a variety of housing Downtown.</i>
<i>CI Objective 10</i>	<i>Improve the appearance and attractiveness of the Downtown.</i>
<i>CI Objective 11</i>	<i>Preserve archaeological and historic resources.</i>
<i>CI Objective 12</i>	<i>Support public art and sculpture.</i>

Policies and programs recommended to meet these objectives include a variety of design guidelines for new development. The objectives related to the Downtown include design guidelines and allow for additional housing in that area. Finally, there are policies and programs aimed at protecting historic resources and supporting public art.

Changes in the Community Identity Chapter From the Original Draft Plan

The major changes in this chapter include:

1. A long series of design recommendations for new residential development (programs under original Policy 2 and Policy 3) have been eliminated and replaced with a simplified list under new CI Policy 2.
2. The policy to minimize the effects of automobile-dependent land uses is eliminated (old Policy 8 and attendant programs).
3. Old Policy 12 regarding scenic views has been eliminated.
4. A list of recommended lighting guidelines under CM Policy 11 was eliminated.
5. A program (old Program 15.1) that called for identification of sections of various streams for future restoration was eliminated.
6. Policies and programs addressing protection of archaeological resources have been eliminated (old Policy 33 and attendant programs).

2.3 CONFORMANCE WITH OTHER PLANS AND POLICIES

The Draft Novato General Plan should be consistent with the *Marin Countywide Plan*, which contains goals, policies, and guidelines that guide future development in unincorporated areas bordering the City, including lands within the City's Sphere of Influence (SOI) which have not been annexed into the City. The Draft General Plan was developed to be generally consistent with the Countywide General Plan to ensure

compatibility of data and policies. Potential inconsistencies with the Countywide Plan are outlined below.

Sphere of Influence (SOI)

The City believes that a portion of the St. Vincent's property located in the southeast corner of the City is in its Sphere of Influence. The rationale for including this area within the SOI is that this property is a logical southern boundary for the City (as shown on Figure 2). In the Countywide Plan, this area is a small piece of land located between the recognized SOI of the City of Novato and the recognized SOI of the City of San Rafael. The Countywide Plan designates the western third of the area as Urban and Conservation Reserve (1 unit per 100 acres), the middle third as Public Facility/Urban and Conservation Reserve, and the eastern third as Tidelands (subject to State Lands Commission jurisdiction). The City is proposing the entire area be designated Conservation (maximum of one dwelling unit per 60 acres).

Land Use Designations

In various instances the Draft General Plan designates land uses in the SOI in a different fashion than they are designated in the Countywide Plan. For the most part, these differences are minor, such as the County designation of Agriculture which would allow one dwelling unit per 30-60 acres while the City's Draft General Plan may designate the area Conservation (one dwelling unit per 60 acres). The more important differences are catalogued below.

1. Bel Marin Keys Area. The City proposes a land use designation of Conservation (1 d.u./60 acres) from the area southeast of the intersection of Highway 101 and Highway 37 outside its City Limits but within its SOI. The County designates this area for Agriculture and Conservation (1 unit to 2-10 acres).
2. Black Point Area. The City designates the area along the railroad tracks as Light Industrial (maximum FAR of 0.4) while the County designates the area for Commercial Residential (1 d.u./1-5 acres or FAR of 0.1-0.3).

Northwest of Highway 37. The City designates lands north of Atherton Avenue as Very Low Density Residential (0.5-1 d.u./acre) while the County designates the area as Single Family (1 d.u./1-5 acres).

South of Atherton Avenue and East of Olive Avenue. The City designates certain parcels as Conservation while the County designates the area as Agriculture.

South of Atherton Avenue and West of Olive Avenue. The City designates certain parcels as Conservation while the County designates the area as Agriculture. Other parcels in this area are designated by the County as Single Family (1 d.u./1-5 acres) while the City designates the area as either Conservation or Low Density Residential (1.1-5 d.u./acre). Finally, there is an area designated as Agriculture (1 d.u./2-10 acres by the County which is designated Low Density Residential (1.1-5 d.u./acre) by the City.

3. North Novato Area. The area west of Gness Field is designated Industrial by the County and Conservation by the City. This is the most significant difference in land use designations between the two plans. See additional discussion of this area in the discussion of Project Alternatives in Section 5.6 of this Draft EIR.

The Ridge Between Atherton Avenue and the Rush Creek Area. This area is designated Planned Residential (1 d.u./1-10 acres) and as Ridge and Upland Greenbelt Area by the County and Very Low Density Residential (0.5-1 d.u./acre) by the City.

West of Highway 101. There is a large area designated as Industrial (FAR of 0.04-.35) by the County and Light Industrial (maximum FAR of 0.4) by the City. The City also designates a small portion of this area as General Commercial (maximum FAR of 0.4).

4. West Novato Area. Much of this area is designated Single Family (1 d.u./1-5 acres) and Ridge and Upland Greenbelt Area by the County while the City designates the area mainly as Low Density Residential (1.1-5 d.u./acre).
5. Indian Valley Area. There is an area that the County designates as Planned Residential (1 d.u./1-10 acres) that the City designates as Very Low Density Residential (0.5-1 d.u./acre).
6. Loma Verde Area. Much of the area is designated as Single Family (either 2-4 d.u./acre or 4-7 d.u./acre) by the County while the City designates the same area for Low Density Residential (1.1-5 d.u./acre).

There is a small area designated by the County as Public Facility Single Family (4-7 d.u./acre) which the City designates Community Facilities and Civic Uses (maximum FAR of 0.4).

The Draft Novato General Plan is consistent with the Gness Field Airport Land Use Plan. The Draft General Plan recommends continued coordination to maintain regional consistency with the County of Sonoma, the Marin County Congestion Management Agency, the Bay Area Air Quality Management District, the Metropolitan Transportation Commission, and the Regional Water Quality Control Board (San Francisco Bay Region). The Draft Plan is basically consistent with growth projections prepared by the Association for Bay Area Governments (ABAG) in its *Projections 94* (see subsequent discussion of ABAG projections in the Growth-Inducing Impacts Section, Section 5.1 of this EIR).

2.4 JURISDICTIONAL/PERMIT GRANTING AGENCIES

As the Lead Agency for the "project," the City of Novato will be responsible for considering certification of the EIR and adoption of the General Plan. In addition to the City of Novato, the County of Marin has jurisdictional and permit-granting responsibilities for areas within the Novato Planning Area (i.e., in areas that are unincorporated). There are also other agencies that have control over specific environmental resources and/or concerns in the planning area. The following is a listing of agencies that may utilize this EIR.

Federal Agencies

1. National Marine Fisheries Service: administers Endangered Species Act and Marine Mammal Protection Act as they pertain to marine species.
2. U.S. Fish and Wildlife Service: administers Endangered Species Act and Marine Mammal Protection Act; advises the U.S. Army Corps of Engineers on wetland projects (under Section 10 and Section 404).
3. U.S. Environmental Protection Agency: oversees U.S. Army Corps of Engineers analysis and issuance of permits for filling of Section 404 wetlands; issues permits for point source discharges to waterways.
4. U.S. Army Corps of Engineers: Controls dredge and fill operations in U.S. waters including wetlands under Section 404 of the Clean Water Act; controls navigable waters under Section 10 of the River and Harbors Act; establishes wetland boundaries.

State Agencies

1. Department of Housing and Community Development: reviews the adequacy of Housing Elements and funding for affordable housing programs.
2. State Lands Commission: responsible for tidelands and historic waterways.
3. California Department of Transportation: responsible for the management of the Statewide transportation network.
4. The Native American Heritage Commission: mandated to preserve and protect places of special religious or cultural significance pursuant to Section 5097 et seq of the Public Resources Code.
5. California Department of Fish and Game: oversees work done in streams pursuant to Fish and Game Code 1601-1603; responsible for protecting plant and wildlife populations.
6. Bay Conservation and Development Commission: issues permits for areas subject to tidal action, areas along the Bay shoreline, and along certain waterways.
7. California Regional Water Quality Control Board: responsible for maintaining water quality within San Francisco Bay and adjoining waters.
8. California Department of Conservation: the Division of Mines and Geology provides expertise regarding geologic and seismic hazards and oversees mineral resource issues.
9. Bay Area Air Quality Management District: monitors air quality and has permit authority over certain types of facilities.
10. California Department of Aeronautics: has authority over operations at Gness Field Airport.

Regional Agencies

1. Association of Bay Area Governments: prepares regional plans, including regional housing needs determinations that must be addressed in local housing elements.
2. The Metropolitan Transportation Commission: develops the regional transportation system in the Bay Area.

Local Agencies

1. County of Marin and Marin Countywide Planning Agency: responsible for future development in unincorporated areas of the county.
2. Marin County Congestion Management Agency: responsible for administering the countywide Congestion Management Plan.
3. Special Districts: there are numerous special districts responsible for providing services to the Novato population; agencies include the Marin Municipal Water District, North Marin Water District, Novato Sanitary District, Novato Unified School District, Marin County Flood Control District, Marin County Open Space District, Marin Community College District, and Novato Fire Protection District.

3.0 SUMMARY SECTION

3.0 SUMMARY

The City of Novato has prepared a Draft General Plan intended to replace the existing General Plan which was originally adopted in 1981. This Draft General Plan contains goals, objectives, policies, and programs aimed at guiding future development within the City of Novato. The impacts from future development consistent with this Draft General Plan are identified and assessed in the fourth and fifth chapters of this EIR. This chapter is intended to summarize the more important impacts, mitigations, and conclusions of the EIR.

This section begins with brief narrative discussions of the more substantial impacts. It is followed by a series of tables that catalogue the impacts and the mitigations for these impacts.

It should be clearly noted that this EIR is a program EIR that addresses cumulative effects of potential development under the Draft Plan on the area environment. Specific projects may have potentially significant effects on the site proposed for development. These projects must be assessed per CEQA and the policies and programs established in the Draft General Plan. The Draft General Plan provides a framework of policies and programs to guide and amend development proposals so that significant environmental effects do not result. However, this Draft EIR is not an environmental assessment of the specific impacts of any particular project on a particular site.

Geology

Novato is a seismically active area. All residents and businesses are at risk from the effects of a major earthquake. New development will expose people and structures to potentially significant risk. The Draft General Plan contains policies and programs that reduce this risk to an acceptable level. However, the risk of loss of life and property remains. This risk must be accepted given the locale.

The Draft General Plan also contains policies and programs to reduce the risk from landslides and unstable slopes. It reduces development potential on steep hillsides and on areas underlain by bay muds. This means that fewer people and improvements will be at risk as compared to the current General Plan. The Draft Plan's policies and programs reduce the long-term risk from geologic hazards to a level that is less than significant.

The Draft Plan also contains policies and programs that will be used to control erosion from future construction activities and to minimize changes in the area topography. Productive mineral resources will be protected.

While buildout allowed per the Draft General Plan will have a number of potentially significant impacts related to geology, the Draft General Plan policies and programs will reduce all these cumulative impacts to a level that is less than significant.

Hydrology

The Draft Plan does provide development potential in areas that are within the 100-year floodplain. However, policies and programs of the Draft Plan regulate future development within the 100-year floodplain and areas subject to sea level rises so that new development will not be placed at risk from flooding. These policies and programs reduce flooding impacts on new development to a level that is less than significant.

Future development will increase impermeable surfaces and generate additional runoff. This additional runoff could cause flooding downstream from future development; this would be a potentially significant impact. However, the Draft Plan addresses this impact by requiring adequate flood control measures for all new development. The Draft Plan reduces the cumulative impact to a level that is less than significant. Impacts from specific projects must be reviewed at a site-specific level. The Draft Plan contains the framework for the City to ensure that runoff from new projects does not significantly affect other properties.

Similarly, erosion impacts from increased runoff and construction sites constitute a potentially significant impact. This impact is addressed in the Draft General Plan through policies and programs establishing erosion control guidelines as well as Novato's participation in the County Stormwater Pollution Prevention Program. Stream setbacks are required for all major streams via a Watercourse Overlay Protection zoning. Policies and programs included in the Draft General Plan reduce all hydrologic impacts to a level that is less than significant.

Vegetation and Wildlife

Future development that would be allowed under the Draft General Plan will remove undeveloped habitat and displace plant and animal populations. Development could result in the loss of wetlands, riparian habitat, oak woodlands, and habitat used by sensitive wildlife species. These would all be significant impacts. However, the Draft Plan contains numerous policies and programs that reduce the significance of these effects.

Some of the Draft Plan policies and programs aimed at preserving and protecting biotic resources include:

1. The Draft Plan creates a Bayfront Overlay Zone which limits future development on wetlands and diked baylands east of Highway 101.
2. The Draft Plan creates a Watercourse Protection Overlay Zone that substantially restricts development within riparian corridors.
3. The Draft Plan creates a Wetlands Protection Overlay Zone that substantially restricts development in all wetlands, including those in the watercourse and bayfront zones.
4. A Constraints Analysis is required for all developments located on properties that are in or adjacent to the Bayland Overlay Zone, the Watercourse Protection Zone, and mapped Scenic Resources. This Constraints Analysis will be prepared when developing project applications and will be used to avoid and/or mitigate impacts on significant resources.
5. The Environment Chapter contains specific policies directed at protecting wetlands, agricultural lands, woodland areas, ridgelines, and water quality.
6. Sensitive plant and animal species (i.e., Special Status Species) are provided protection.
7. In general, even if the City is built out to the maximum densities allowed in the Draft Plan, the Land Use Designations Map provides for about 50 percent of the

area within the City and its Sphere of Influence being left undeveloped. This undeveloped area will continue to provide substantial biotic habitat.

The potential impact on Special Status Species is reduced by providing protection to populations of these species and the habitats they inhabit or use. However, the EIR concludes that the definition of the species that are covered by these policies and programs is too narrow. The EIR recommends additional classes of plants and wildlife that shall be protected. With this addition, the Draft Plan mitigates impacts on sensitive biotic species to a level that is less than significant.

Oak and hardwood woodlands could be displaced by future development. The Draft General Plan contains policies and programs aimed at preserving and protecting these woodlands. The cumulative effect will be less than significant.

Wetlands are provided substantive protection in the Draft General Plan, especially through the creation of the Bayfront Overlay Zone and the Wetlands Protection Overlay Zone. However, the policies and programs do not reduce the cumulative impact to a level that is less than significant. The EIR recommends designation of all lands within the Bayfront Overlay Zone that have not been legally developed or filled as Conservation, Parkland, Open Space, or Agriculture. This addition plus a recommended program to provide for a buffer between wetlands and adjacent new development will reduce the cumulative effects to a level that is less than significant except for the construction of a roadway connection between the Bel Marin Keys industrial area and Highway 37. Even if the route for this road is located immediately east of the railroad tracks, it will require filling of wetlands. As such, this roadway's impact on wetlands is considered a significant adverse impact that may not be mitigated.

Wildlife populations are afforded substantial protection by maintaining large undeveloped acreages of wetlands, woodlands, and riparian habitat. The general impacts on wildlife are reduced to a level below significance with the exception of protection of ridgelines which serve as wildlife travel corridors. This EIR recommends language to provide additional protection for these ridgelines. With that addition, the cumulative impact is mitigated.

New development has the potential of introducing or enhancing the spread of invasive non-native plants such as broom and pampas grass. The Draft Plan does not contain substantive policies to mitigate this potentially significant impact. The EIR recommends additional programs that will satisfactorily reduce this impact to a level that is less than significant.

All cumulative biotic impacts, with one exception, are judged to be less than significant given the policies and programs in the Draft General Plan plus additional mitigations recommended in this EIR. The one exception is the potential impact resulting from construction of the new connection between Bel Marin Keys and Highway 37. While the other cumulative impacts on vegetation and wildlife are reduced to a level that is less than significant, future projects may have site-specific significant impacts. The policies and programs included in the Draft Plan and this EIR provide the framework for assessing and mitigating those site-specific impacts, however, the analysis and determination of impacts for those future projects must be done on a project-by-project basis. Particular sites may be constrained due to the presence of sensitive or valuable biotic populations or habitat. Project-specific Constraints Analysis (as required for sensitive areas by the Draft General Plan) and CEQA review will determine whether projects can be developed at the maximum intensity permitted under the Draft General Plan Land Use Designations Map.

Cultural Resources

The City contains numerous archaeological and cultural resources that could be damaged by future development activities. The Draft Plan contains basic policies and programs that require new development to avoid significant impacts to these resources. The Draft EIR recommends additional policy language to ensure the continued protection of archaeological resources. As such, there will not be a significant cumulative impact.

Transportation and Circulation

Buildout under the Draft General Plan, as well as development elsewhere, will result in a total morning (a.m.) peak hour trip volume of 26,800 trips and an afternoon (p.m.) peak hour total of 45,900 trips. This represents an increase of 37 percent in the a.m. peak hour trips and a 39 percent increase in the number of p.m. peak hour trips. This increase in traffic volumes will have potentially significant impacts as regards pedestrian, bicyclist, and motor vehicle safety. It will have potentially significant impacts on the character of residential streets. It will result in potentially significant congestion at intersections and on streets. Finally, it will aggravate congestion on Highway 101 and Highway 37.

The Draft General Plan establishes Levels of Service for Novato intersections and includes policies to ensure that new development is adequately served by transportation facilities. The Transportation Chapter contains numerous policies and programs calling for coordination of land use with transportation planning and managing a roadway system that accommodates future growth.

In general, these policies and programs substantially reduce traffic-related impacts. Policies and programs reduce cumulative safety impacts generally to a level that is less than significant. The DEIR recommends an additional policy and programs to ensure that new development does not substantially affect traffic on residential streets in residential neighborhoods.

Traffic congestion on streets and at intersections will increase due to the increased traffic volumes. The Draft Plan establishes Levels of Service for intersections and provides a framework for reviewing new development for consistency with these Levels of Service.

The Draft Plan with the few recommended additional policies and programs will mitigate all cumulative traffic impacts below the significant level except for increased congestion of Highway 101 and Highway 37.

While the mitigated Draft Plan will reduce cumulative congestion impacts on City streets to a level that is less than significant, it is clearly noted that there will be a substantial increase in traffic. Streets and intersections will operate at or better than minimum Levels of Service, but there will be more congestion. This is not a significant impact given the defined Levels of Service, but it is certainly an effect that will be noticed by many existing and future residents.

Traffic generated by buildout under the Draft General Plan will result in portions of Highway 101 operating at Level of Service F. In addition, buildout traffic will cause the western portion of Highway 37 to operate at LOS F. There is no planned method of relieving this congestion. Because increased congestion on Highway 101 and Highway 37 will adversely affect Novato residents, this is considered a significant adverse impact for which there is no mitigation.

Air Quality

Development consistent with the Draft Plan will generate increased traffic volumes which will correspondingly increase emission of air pollutants. The air quality analysis states that the increase is within the parameters predicted for Novato in the *Bay Area '91 Clean Air Plan*; in fact, the emissions are less than predicted in the Clean Air Plan since buildout under the Draft General Plan would be less than would occur under the existing General Plan. Thus, this increase in emissions has been accounted for in developing area-wide plans for maintaining adequate air quality. Buildout will not result in any new exceedances of State or federal air quality standards. The Draft Plan contains numerous policies and programs to reduce the dependence on single-occupancy vehicles and private vehicles in general. The Draft Plan encourages mass transit and other alternative modes of transport. It includes a full set of policies to expand bicycle and pedestrian facilities. These policies and programs will act to reduce the emission of air pollutants. The Draft Plan will not have a significant cumulative effect on local or regional air quality. No additional policies and programs are required nor recommended in the EIR.

Noise

Development consistent with the Draft Plan will generate increased traffic volumes which will increase noise levels along major roads. Future development could be located in areas that experience noise levels that are typically considered incompatible with residential or other types of development. These would both be significant impacts.

The Safety and Noise Chapter and the Transportation Chapter of the Draft Plan contain policies and programs that require noise impacts to be mitigated. The Draft EIR contains an additional program to clarify that the City will attempt to mitigate noise impacts resulting from new development on existing residential neighborhoods. There are also policies to ensure that new development is compatible with its noise environment. The cumulative long-term noise impacts are reduced to a level that is less than significant by these policies and programs and the addition recommended by the Draft EIR. Again, project-specific analysis will be required for major projects to ensure that these projects conform to the noise standards set forth in the Draft General Plan.

Aesthetics

Future development will transform views of land that is currently vacant or undeveloped. This effect would be particularly significant if it involved the loss of scenic ridgelines, wetland areas, or substantial woodland tracts. It would also be significant if it occurred along several scenic routes or at scenic entry points into the City.

The Draft Plan includes a policy to regulate and guide development on ridgelines to protect visual resources. Development on baylands is also restricted. There are specific policies protecting woodlands and wetlands. The Draft Plan includes a map of scenic resources; any development on or adjacent to identified scenic resources must undergo a Constraints Analysis. The Land Use Chapter establishes land use designations that designate about half of the Sphere of Influence as Open Space, Agriculture, Parkland, or Conservation; this means that half the area will remain undeveloped, thus preserving existing views. The Draft Plan Community Identity Chapter contains a full range of guidelines for reviewing new development to reduce visual effects.

The policies and programs of the Draft Plan will reduce the cumulative aesthetic impacts. However, potential impacts on scenic ridgelines will remain a potentially significant

cumulative impact. The Environment Chapter Policy 27 regarding scenic resources lacks sufficient standards to conclude that development of these ridgelines may not occur. Also, there is potential for new development at two of Novato's entryways on properties that would not be subject to a Constraints Analysis given the criteria set forth in the Draft General Plan. As such, the Draft Plan will result in potentially significant visual impacts.

This EIR recommends additional programs to strengthen protection of ridgelines and entryways to the City. In addition, it recommends an additional policy regarding the regulation of lighting. With these additional policy and programs, the cumulative visual impacts will be reduced to a level that is less than significant. Again, project-specific analysis will be required (per the Constraints Analysis required for most major projects and CEQA review) to ensure that specific projects do not adversely affect local views and to ensure project compatibility with the character of the surrounding neighborhood.

Public Services

The Land Use Chapter contains policies and programs that addresses growth management. These policies and programs state that public service providers must provide a determination of whether they have adequate facilities and resources to serve any proposed new development. If the service agency cannot provide service, then the Draft Plan provides requirements for project re-design or collection of necessary fees to provide adequate services. Alternatively, projects could be approved even if there are inadequate facilities or services if it can be clearly shown that the project substantially benefits the public. The Draft Plan further provides that the City will support other public service agencies in collecting fees necessary to continue to provide adequate public facilities and services to Novato residents and businesses. The system of assessing public facilities and services when reviewing new development proposals ensures that adequate services will be provided.

The increased population resulting from new development allowed under the Draft General Plan will correspondingly increase the demand for public services. Water, drainage, and wastewater improvements have already been planned to meet the demand of buildout under the Draft General Plan. Methods of financing these improvements are already in place. The determination of facility/service availability established in the Public Facilities and Services Chapter and Land Use Chapter Policies 7 and 8 provide the framework for reviewing new development.

Both the Fire District and Police Department will need additional staff and equipment to serve new development. It is unknown whether increases in tax revenues from new development will sufficiently increase these departments' budgets to provide these additional services. The Draft Plan establishes review standards for these agencies and provides the nexus for collecting additional fees if necessary. The cumulative impact is considered less than significant.

The School District receives a School Facility Mitigation Fee from new residential development. However, the revenues from this fee are insufficient to finance construction of new schools that will eventually be required to serve the students generated by area buildout. The Draft Plan provides for a review of new development to ensure there are adequate school facilities. The Draft Plan also provides that the City will work with the Novato Unified School District to develop other funding sources if current Mitigation Fees are inadequate to provide adequate school facilities.

While it is unsure whether, given existing revenue sources, every public service provider will be able to continue to provide adequate service to a buildout population, the Draft General Plan establishes a basic framework of assessment to ensure that development will not be permitted unless adequate services and facilities can be provided. It further establishes the basis for future nexus analyses that will allow public service providers to establish or increase their fees to ensure that new development pays its own way. These policies and programs substantially reduce the cumulative effect on public services. The Draft EIR recommends several specific new programs related to ensuring adequate services (e.g., additional site review by the police department and additional access for the fire district). With these additions, the cumulative effects on public services are mitigated to a level that is less than significant.

Recreation

The increased population that will occur from buildout under the Draft General Plan will increase the demand for parks, trails, and recreational facilities. The Draft Plan includes policies to ensure that adequate facilities are provided. These Draft Plan policies and programs reduce the cumulative impact on recreation to a level that is less than significant.

Land Use

Future development will convert vacant lands to residential, commercial, office, or industrial use. Buildout under the Draft General Plan could result in as many as 5,079 new residential units and 5,342,094 square feet of commercial/office/industrial development within the existing City Limits. An additional 563 new residential units and 400,000 square feet of non-residential development could occur within the Sphere of Influence, if those properties developed under the City's jurisdiction.

This growth, in and of itself, is not considered to be a significant impact since sensitive lands are preserved or protected by policies and programs of the Draft Plan, as described in previous sections of this summary discussion. Wetlands, agricultural lands, scenic ridgelines, lands along watercourses, and other sensitive habitat will be left undeveloped or developed at very low densities. About 50 percent of the land within the City and its Sphere of Influence will be left undeveloped. Other policies and programs of the Draft Plan ensure that projects on those lands that are not identified as some type of sensitive land will be developed to minimize environmental effects and be allowed only if adequate services are available. The Draft General Plan generally provides for future growth in a fashion that preserves valuable natural and sociocultural resources. However, protections for certain lands are not adequate to reduce all impacts to an insignificant level, as described in previous sections. As such, the cumulative effect on land use will remain significant. The inclusion of recommended mitigation measures previously described under each section will reduce the cumulative land use impact to a level that is less than significant.

The Draft Plan includes two minor extensions of the City's Sphere of Influence. In neither case is the development potential on these extensions greater than currently allowed in the *Marin Countywide Plan*. These two additions to the Sphere of Influence will not be a significant impact.

The Draft Plan also contains different land use designations than the Countywide Plan for unincorporated lands outside the City Limits but within its Sphere of Influence. However, buildout on these currently unincorporated lands under the Draft City General Plan would be less intense than allowed under the Countywide Plan, so this is not a significant impact.

Growth-Inducing Impacts

There is less development potential under the Draft General Plan than allowed under the existing General Plan. For the unincorporated areas within the City's Sphere of Influence, there is less development potential than currently allowed under the *Marin Countywide Plan*. Thus, the Draft General Plan has no growth-inducing impacts. It reduces the growth that could occur under existing land use plans.

However, the Draft Plan does set land use designations for vacant lands. These designations allow development, increases in population, and new jobs. The Draft Plan contains specific policies and programs to ensure that new development will be restrained to the "carrying capacity" of the City. New development will be permitted only if environmental protections and adequate public facilities and services are provided. While the Draft Plan permits new growth, this growth will not outstrip the City's or other service agencies' resources. As such, the growth is not considered a significant adverse impact.

Summary

New development that could occur under the Draft General Plan will result in many significant impacts. The policies and programs of the Draft General Plan reduce most of these potentially significant impacts to a level that is less than significant. There will remain several potentially significant impacts. These potentially significant impacts that were summarized above and are described in detail in Section 4 of this EIR, can be mitigated by mitigation measures recommended in this EIR. There are two exceptions, that is, impacts resulting from buildout under the Draft Plan that cannot be mitigated by the Draft Plan or measures in this EIR. These significant impacts are:

1. Increased traffic will result in segments of Highway 101 and Highway 37 operating below acceptable levels of service.
2. Construction of a new roadway connector between Bel Marin Keys industrial park and Highway 37 will cause a loss of wetlands.

Again, it must be noted that this EIR addresses cumulative effects of potential development under the Draft Plan on the area environment. Specific projects may have potentially significant effects on the locale or area. These projects must be assessed per CEQA and the policies and programs established in the Draft General Plan. The Draft General Plan provides a framework of policies and programs to review, guide, and amend development proposals so that significant environmental effects do not result. However, this Draft EIR is not an environmental assessment of the specific impacts of any particular project on a particular site; these specific impacts must be evaluated in future environmental reviews of these projects.

Project Alternatives

Chapter 5 of this Draft EIR contains a lengthy analysis and comparison of seven alternatives to the Draft General Plan as proposed. The seven alternatives include the following:

1. Existing General Plan. This alternative includes development per the land use designations and policies of the City's existing 1981 General Plan. This is the "no project" alternative based upon existing plans and consistent with available

infrastructure and community services. This alternative was assessed by the City when selecting the "preferred plan alternative."

2. Reduced Development. This alternative assumes a moderate reduction in development potential. This is the second alternative that was assessed by the City when selecting the "preferred plan alternative."
3. Increased Development. This alternative incorporates a modest increase in development potential. It is primarily based on applying current *Marin Countywide Plan* land use designations for areas outside the Novato City Limits but within the City's Sphere of Influence.
4. Greatly Reduced Development. This alternative incorporates a 40 percent decrease in the development allowed under the Draft General Plan.
5. Environmental Constraints Emphasis. This alternative would allow about the same amount of development as the Draft Plan, but development would be located so as to maximize environmental protection.
6. Compact Development. This alternative would increase development density and intensity in the central area of Novato and reduce density and intensity in outlying areas. It would allow about the same amount of development as the Draft Plan.
7. No Growth. This alternative would allow only the legal minimum development on all parcels.

Buildout potential for the Draft Plan as compared to the seven alternatives is described below.

Buildout Potential For General Plan Alternatives

Alternative	Residential Units	Non-Resid. (Sq. Ft.)
Draft General Plan	5,640	5,740,000
Alternative 1 - Existing General Plan	6,270	7,440,000
Alternative 2 - Reduced Development	5,010	4,380,000
Alternative 3 - Increased Development	5,730	6,210,000
Alternative 4 - Greatly Reduced Development	3,380	3,440,000
Alternative 5 - Environmental Constraints Emphasis	5,640	5,740,000
Alternative 6 - Compact Development	5,640	5,740,000
Alternative 7 - No Growth	2,100	1,100,000

Source: Novato Community Development Department, November, 1995

In assessing project alternatives to determine whether they are feasible, the EIR preparers must also examine whether the alternative in question is consistent with the project Objectives. The Objectives for this project are the Draft General Plan Goals which were previously listed in Section 2.2. It is noted that the project alternatives are compared as regards their effect on the environment. There may be other effects, such as the number of jobs produced, the economic effect on the development potential of a particular property, and effects on the "character" of the community. These other effects may be important to the citizens of Novato, and the City may amend or change its General Plan based on these other effects. These other effects are included in some of the Draft Plan Goals (i.e., the

project Objectives). It is not the purpose of the comparison in this EIR to determine "what is best" for the City by taking into account all the varied aims and interests of its citizenry. This debate occurred when the City decided on its preferred alternative and will occur again as the City decides on its final General Plan. The purpose of this EIR is to compare the general, or cumulative, environmental effects of the seven alternatives as compared to the Draft Plan as proposed. This information, when combined with other data provided the City Council, will aid them in making an informed decision.

Comparison of Alternatives

In no case does the existing General Plan (Alternative 1) reduce the level of impact from future development as compared to the Draft Plan. It allows more development than the Draft Plan and thereby increases the degree of most impacts. It will generate more new traffic than any alternative except Alternative 3 thereby aggravating congestion on Highway 101 and Highway 37, as well as on other streets.

Alternative 2 (Reduced Development) would reduce the overall development potential, thereby resulting in a slightly smaller final population. It would eliminate the significant impact on Highway 37. It would not generate as much new traffic on Highway 101 as the Draft Plan.

Alternative 3 (Increased Development) would result in potentially significant effects on biotic resources in the Bayfront Overlay Zone. Development under this alternative will also have potentially significant visual impacts. It would not eliminate impacts on Highway 37 and would aggravate congestion on Highway 101. There is no environmental advantage to this alternative.

Alternative 4 (Greatly Reduced Development) would reduce the overall development potential by 40 percent. This would result in fewer people, fewer jobs, less traffic congestion, less demand for public services, and fewer impacts on natural resources. It would eliminate the significant impact on Highway 37. While this alternative will not eliminate the significant impact of LOS F on portions of Highway 101 during peak hour traffic, it will not aggravate this problem as much as the Draft Plan.

Alternative 5 (Environmental Constraints Emphasis) would substantially reduce impacts on most biotic resources, including wetlands, native woodlands, wildlife habitat, riparian habitat, and habitat used by Special Status Species. This alternative could also result in positive aesthetic effects since development will be clustered. Otherwise, this alternative will have similar effects as the Draft Plan. Portions of Highway 37 and Highway 101 will operate at LOS F in the future.

Alternative 6 (Compact Development) would have positive effects on biotic and aesthetic resources. There would be environmental benefits regarding less need for future roadway and intersection improvements and extension of public services. Portions of Highway 37 and Highway 101 will operate at LOS F in the future.

Alternative 7 (No Growth) substantially reduces all impacts. However, like all the alternatives, it will not eliminate the fact that portions of Highway 101 will operate at Level of Service F during peak commute periods.

The Draft General Plan, as proposed, reduces potential environmental impacts in a number of areas. First, it provides specific direction for development to avoid substantial environmental constraints and hazards. It codifies many to most current best management

practices and/or recent State and Federal laws regarding seismic safety, flooding, sensitive biotic species and habitats, water and air pollution, noise exposure, traffic safety, and public service infrastructure. More significantly, in reducing the overall development potential in Novato (compared to development allowed under the current General Plan), it focuses this reduction on the sites with the most hazards and/or constraints. In so doing, it reduces the amount of impact and the risk from developing in those areas.

Environmentally Superior Alternative

The Draft General Plan contains policies and programs that reduce most cumulative impacts to a level below significant. However, strictly from an environmental perspective, Alternative 7 would be the environmentally superior alternative because it eliminates one significant impact and substantially reduces all other impacts. It is noted that this alternative will also have economic and fiscal effects on the City not assessed in this EIR, and it may not be the most desirable alternative when all considerations and project Objectives are taken into account. If the City selects an alternative other than the alternative identified as the environmentally superior alternative, then the City must issue written findings as to why the superior alternative or alternatives were rejected in favor of the selected alternative.

Comparing the alternatives on the grounds of elimination/reduction of environmental impacts, the following ranking applies (i.e., the alternatives at the top of the list are "superior").

1. Alternative 5
2. Alternative 4, Alternative 5, and Alternative 6 - all these alternatives, in different ways, substantially reduce environmental effects and are judged to be approximately equal
3. Alternative 2
4. Draft General Plan
5. Alternative 1
6. Alternative 3

Impact and Mitigation Table

Table 6 on the following pages provides a summary of the impacts identified in this Draft EIR. The table includes three levels of analysis. The first column describes the impact that would result from buildout under the Draft General Plan. Following that impact is a description of the level of significance that impact has. Levels of significance include "less than significant," (that is, less than significant as measured against significance criteria established for each area of impact), "potentially significant," "significant," or "beneficial."

The next column of the table lists the Draft General Plan policies that address the impact and mitigate the impact. For the sake of brevity, only the policies are listed as mitigations and not all the implementation programs of each policy; also, only the number and title of the policy is listed on the table (the listing of the mitigations in Chapter 4 includes the complete text for each referenced policy and program). When a policy is listed in this table, it includes all attendant implementation programs. It should be noted that policies and programs of the Draft General Plan are listed as mitigations when, in fact, they could be included as part of the proposed "project." They are listed as mitigations to clearly show how impacts from future development will be mitigated by the Draft Plan; this indicates the self-mitigating character of the Draft Plan. This listing of Draft Plan "mitigations" is followed by a description of the level of significance for the impact after implementing the Draft General Plan policies and programs.

If the Draft General Plan policies and programs do not mitigate the impact to a level that is less than significant, additional mitigation measures are recommended in this EIR. They are listed below the Draft General Plan mitigations. A separate level of significance determination is described to show the significance of the impact after implementing the Draft General Plan mitigations and the EIR recommendations. Chapter 4 of this EIR may include additional recommended mitigations to further reduce certain impacts. These mitigations are not required to reduce the impact to a level of insignificance and are not mandatory; such mitigations are not listed on Table 6.

TABLE 6
IMPACT AND MITIGATION SUMMARY

IMPACT		SIGNIFICANCE BEFORE MITIGATION	MITIGATION		SIGNIFICANCE AFTER MITIGATION
4.1	Geology and Soils				
4.1-A	Population and employment activity increases under the proposed Draft Plan would increase the number of persons exposed to risk of injury, death or property damage resulting from seismic events in the area.	PS	Safety Chapter Policy 1. Safety Chapter Policy 2. Environment Chapter Policy 11. Land Use Chapter Policy 9. Land Use Designations Map.	Seismic Hazards. Limit Building in Areas with Significant Risk Potential. Bayfront Overlay Zone. Constraints Analysis.	LS
4.1-B	Development would be allowed in areas subject to tsunami.	PS	Safety Chapter Policy 8. Land Use Designations Map.	Reduce Flood Hazards.	LS
4.1-C	Seismic events could result in the failure of Stafford Dam which could cause injury or death and property damage.	PS	Safety Chapter Policy 10.	Reduce Hazards of Dam Failure.	LS
4.1-D	Development has the potential of exposing additional people and structures to slope failure hazard.	PS	Safety Chapter Policy 3. Environment Chapter Policy 27. Land Use Chapter Policy 9.	Slope and Soil Instability. Protect Scenic Resources. Constraints Analysis.	LS
4.1-E	Construction will increase erosion from soils. This erosion can cause sedimentation of Novato streams and other waterways.	PS	Environment Chapter Policy 1. Environment Chapter Policy 4. Environment Chapter Policy 35. Environment Chapter Policy 36. Environment Chapter Policy 37. Land Use Chapter Policy 9.	Ecology of Creeks and Streams. Erosion Control. Watershed Management. Prevent Point Source Pollution. Use CEQA to Reduce Urban Runoff. Constraints Analysis.	LS
4.1-F	Future development could remove properties of known mineral resources from future use.	PS	Environment Chapter Policy 40.	Mineral Resources.	LS
4.1-G	Construction of future projects would require extensive earthmoving and grading, resulting in permanent changes in topography.	PS	Same policies as listed under Impact 4.1-A, 4.1-D, and 4.1-E.		LS

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TABLE 6 (continued)
IMPACT AND MITIGATION SUMMARY

IMPACT		SIGNIFICANCE BEFORE MITIGATION	MITIGATION		SIGNIFICANCE AFTER MITIGATION
4.2	Hydrology and Drainage				
4.2-A	Development within flood zones will expose more people and property to flood hazards.	PS	Safety Chapter Policy 4. Safety Chapter Policy 5. Safety Chapter Policy 6. Safety Chapter Policy 7. Safety Chapter Policy 8.	Encourage Enhanced Floodwater Storage. Utilize Updated Flood Insurance Maps. Cooperate with Marin County. Pursue Available Funding Sources. Reduce Flood Hazards.	LS
4.2-B	Future development will increase the area covered with impermeable surfaces which will increase the amount of runoff. This runoff can result in increased flooding in the City storm drain system and/or along receiving waterways.	PS	Safety Chapter Policy 4. Safety Chapter Policy 8. Safety Chapter Policy 9. Public Facilities Chapter Policy 1.	Encourage Enhanced Floodwater Storage. Reduce Flood Hazards. Storm Drainage Systems. Management of Public Facilities.	LS
4.2-C	Increased runoff into Novato streams will aggravate existing problems of creek bank slumping. Continued loss of creek bank can threaten lives and structures located along the streams. The sedimentation from this slumping could cause additional flooding and adversely affects the aquatic habitat along these streams.	PS	Environment Chapter Policy 1. Environment Chapter Policy 2. Environment Chapter Policy 3. Environment Chapter Policy 4. Environment Chapter Policy 5. Environment Chapter Policy 6. Environment Chapter Policy 7. Environment Chapter Policy 8. Environment Chapter Policy 35. Environment Chapter Policy 36. Environment Chapter Policy 37. Land Use Chapter Policy 9.	Ecology of Creeks and Streams. Protect Native Vegetation. Wildlife Habitat. Erosion Control. Habitat Restoration. Public Access. Water Quality. Environmentally Sound Flood Control Measures. Watershed Management. Prevent Point Source Pollution. Use CEQA to Reduce Urban Runoff. Constraints Analysis.	LS

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TABLE 6 (continued)
IMPACT AND MITIGATION SUMMARY

IMPACT		SIGNIFICANCE BEFORE MITIGATION	MITIGATION		SIGNIFICANCE AFTER MITIGATION
4.2	Hydrology and Drainage (continued)				
4.2-D	Increased runoff from impermeable surfaces will increase the transport of oils, greases, and other non-natural residues to receiving waterways.	PS	Environment Chapter Policy 4. Environment Chapter Policy 5. Environment Chapter Policy 6. Environment Chapter Policy 7. Environment Chapter Policy 35. Environment Chapter Policy 36. Environment Chapter Policy 37.	Erosion Control. Habitat Restoration. Public Access. Water Quality. Watershed Management. Prevent Point Source Pollution. Use CEQA to Reduce Urban Runoff.	LS
4.2-F	There is the potential more people and property will be exposed to flood hazards from the ocean due to the predicted rise in the sea level.	PS	Safety Chapter Policy 11.	Rising Sea Level.	LS
4.3	Vegetation and Wildlife				
4.3-A	Future development could result in the injury or death of Special Status Species and/or destruction of habitat required by these species.	PS	Environment Chapter Policy 1. Environment Chapter Policy 9. Environment Chapter Policy 10. Environment Chapter Policy 11. Environment Chapter Policy 12. Environment Chapter Policy 16. Environment Chapter Policy 18. Environment Chapter Policy 19. Environment Chapter Policy 23. Environment Chapter Policy 24. Environment Chapter Policy 25. Environment Chapter Policy 26. Environment Chapter Policy 27. Land Use Chapter Policy 9. Land Use Designations Map	Ecology of Creeks and Streams. Definition of Wetlands. Wetlands Ecology. Bayfront Overlay Zone. Bayfront Area Protection. Public Access and Water-oriented Uses. Protect Species Diversity and Habitat. Special Status Species. Protect Native Woodlands. Trees on Public Land. Trees on Private Property. Trees in New Development. Protect Scenic Resources. Constraints Analysis.	PS

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**TABLE 6 (continued)
IMPACT AND MITIGATION SUMMARY**

IMPACT		SIGNIFICANCE BEFORE MITIGATION	MITIGATION		SIGNIFICANCE AFTER MITIGATION
4.3	Vegetation and Wildlife (continued)				
4.3-A	(continued)		<u>EIR Mitigations:</u> The species covered in Environment Chapter Policy 19 will be expanded to include Federal Candidate species, plants listed on Lists 1A, 1B, or 2 of the CNPS <i>Inventory of Rare and Endangered Vascular Plants of California</i> , and animals designated by CDFG as species of special concern.		LS
4.3-B	Future development could reduce the number of trees in Novato, especially the acreage of Oak woodland.	PS	Environment Chapter Policy 23. Environment Chapter Policy 24. Environment Chapter Policy 25. Environment Chapter Policy 26. Land Use Chapter Policy 9.	Protect Native Woodlands. Trees on Public Land. Trees on Private Property. Trees in New Development. Constraints Analysis.	LS
4.3-C	Future development may displace wetlands.	PS	Environment Chapter Policy 1. Environment Chapter Policy 2. Environment Chapter Policy 3. Environment Chapter Policy 4. Environment Chapter Policy 5. Environment Chapter Policy 6. Environment Chapter Policy 7. Environment Chapter Policy 8. Environment Chapter Policy 1. Environment Chapter Policy 2. Environment Chapter Policy 3. Environment Chapter Policy 4. Environment Chapter Policy 5. Environment Chapter Policy 6. Environment Chapter Policy 7. Environment Chapter Policy 8.	Ecology of Creeks and Streams. Protect Native Vegetation. Wildlife Habitat. Erosion Control. Habitat Restoration. Public Access. Water Quality. Environmentally Sound Flood Control Measures. Ecology of Creeks and Streams. Protect Native Vegetation. Wildlife Habitat. Erosion Control. Habitat Restoration. Public Access. Water Quality. Environmentally Sound Flood Control Measures.	

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TABLE 6 (continued)
IMPACT AND MITIGATION SUMMARY

IMPACT		SIGNIFICANCE BEFORE MITIGATION	MITIGATION	SIGNIFICANCE AFTER MITIGATION
4.3	Vegetation and Wildlife (continued)			
4.3C	(continued)		<p>Environment Chapter Policy 9. Bayfront Overlay Zone.</p> <p>Environment Chapter Policy 10. Wetlands Ecology.</p> <p>Environment Chapter Policy 11. Bayfront Overlay Zone.</p> <p>Environment Chapter Policy 12. Bayfront Area Protection.</p> <p>Environment Chapter Policy 13. Views.</p> <p>Environment Chapter Policy 14. Tidal Areas.</p> <p>Environment Chapter Policy 15. Agriculture in Bayfront Areas.</p> <p>Environment Chapter Policy 16. Public Access and Water-oriented Uses.</p> <p>Environment Chapter Policy 17. Inter-Agency Cooperation.</p> <p>Land Use Chapter Policy 9. Constraints Analysis.</p> <p>Land Use Designations Map.</p>	S
			<p><u>EIR Mitigation:</u></p> <p>1. To ensure no loss of wetlands in the area between Bel Marin Keys industrial area and Highway 37, the recommended mitigation is to designate this land that is within the Bayfront Overlay Zone as Conservation. This land use designation shall apply to all lands within the Bayfront Resource Zone that have not already been developed or legally filled above the historic bay elevation.</p> <p>2. Add a program to EN Policy 12 that states that development in the Bayfront Overlay Zone shall provide a 100-foot buffer between wetlands and the development, wherever feasible. This provides a necessary buffer to protect wetland habitat.</p>	S

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TABLE 6 (continued)
IMPACT AND MITIGATION SUMMARY

IMPACT		SIGNIFICANCE BEFORE MITIGATION	MITIGATION		SIGNIFICANCE AFTER MITIGATION
4.3	Vegetation and Wildlife (continued)				
4.3-D	New development will generate erosion and increase runoff from impermeable surfaces which will result in increased pollution of aquatic habitats.	PS	Same policies as listed for Impact 4.1-E.		LS
4.3-E	New development may create barriers to animal movement and dispersal.	PS	Environment Chapter Policy 1. Environment Chapter Policy 2. Environment Chapter Policy 3. Environment Chapter Policy 4. Environment Chapter Policy 5. Environment Chapter Policy 6. Environment Chapter Policy 7. Environment Chapter Policy 8. Environment Chapter Policy 18. Environment Chapter Policy 27. Land Use Chapter Policy 9.	Ecology of Creeks and Streams. Protect Native Vegetation. Wildlife Habitat. Erosion Control. Habitat Restoration. Public Access. Water Quality. Environmentally Sound Flood Control Measures. Protect Species Diversity and Habitat. Protect Scenic Resources. Constraints Analysis.	PS
			<u>EIR Mitigations:</u> 1. Add the following program to Environment Policy 27: This program will add protection for ridgelines which act as critical wildlife travel corridors. <i>EN Program 27.3 Prohibit development within 100 vertical feet of a designated ridgeline within a scenic area and from protruding above a designated ridgeline as seen from a public right-of-way one-eighth of a mile or more away, unless this would prevent all development on a property.</i>		

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TABLE 6 (continued)
IMPACT AND MITIGATION SUMMARY

IMPACT		SIGNIFICANCE BEFORE MITIGATION	MITIGATION		SIGNIFICANCE AFTER MITIGATION
4.3	Vegetation and Wildlife (continued)				
			<u>EIR Mitigations (continued):</u>		LS
			2. Add wildlife travel corridors to the list of resources in LU Program 9.1.		
4.3-F	Future development may introduce new species.	PS	Environment Chapter Policy 2. Environment Chapter Policy 5.	Protect Native Vegetation. Habitat Restoration.	PS
			<u>EIR Mitigations:</u>		LS
			Add the following as a program to Land Use Chapter Policy 9. <i>All development proposals that are required to prepare a Constraints Analysis shall include standards or conditions that ensure that species of broom, acacia, and pampas grass will not be planted as part of any future development of the site.</i>		
4.3-G	Future development will result in the displacement of populations of plants and wildlife.	PS	The mitigations incorporated into the Draft General Plan as listed above for Impacts 4.3-A to 4.3-F impacts will minimize the amount of habitat and populations that are eliminated.		LS
4.4	Cultural Resources				
4.4-A	Future development in the City has the potential to adversely affect areas of archaeological or historical importance.	PS	Community Identity Chapter Policy 29.	Historic Building, Sites and Districts.	PS

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TABLE 6 (continued)
IMPACT AND MITIGATION SUMMARY

IMPACT		SIGNIFICANCE BEFORE MITIGATION	MITIGATION		SIGNIFICANCE AFTER MITIGATION
4.4	Cultural Resources (continued)		<p>EIR Mitigations (continued):</p> <p>It is recommended that the following policy be added under Objective 11</p> <p><i>Policy x <u>Archaeological Resource Protection.</u> Continue to protect archaeological resources.</i></p> <p><i>Program x: Require all major development applications to be reviewed for potential archaeological resources. Identified resources shall be protected as determined by professional archaeologists</i></p>		LS
4.5	Transportation and Circulation				
4.5-A	Increased traffic volumes will reduce traffic safety in Novato.	PS	<p>Transportation Chapter Policy</p> <p>Transportation Chapter Policy</p> <p>Transportation Chapter Policy 10.</p> <p>Transportation Chapter Policy 11.</p>	<p>Coordinate Land Use with Transportation.</p> <p>Level of Service Standards.</p> <p>Improve Traffic Safety.</p> <p>Continuation of Streets.</p>	LS
4.5-B	Increased traffic volumes may impact residential neighborhoods.	PS	<p>Transportation Chapter Policy 7.</p> <p>Transportation Chapter Policy 8.</p> <p>Transportation Chapter Policy 9.</p> <p>Also, the mitigations for Impacts 4.5-A, 4.5-C, and 4.5-D.</p>	<p>Public Participation and Education in Transportation Decisions.</p> <p>Impacts of Transportation Improvements.</p> <p>Protect Irreplaceable Resources.</p>	PS

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TABLE 6 (continued)
IMPACT AND MITIGATION SUMMARY

IMPACT		SIGNIFICANCE BEFORE MITIGATION	MITIGATION	SIGNIFICANCE AFTER MITIGATION
4.5	Transportation and Circulation (cont.)			
4.5-B			<p>EIR Mitigations: it is recommended that an additional policy and programs be added, as described below:</p> <p><i>TR Policy x <u>Through Traffic on Local Streets</u>. Reduce through traffic on local streets to preserve the peace and quiet of residential areas.</i></p> <p><i>TR Program x.1: Adopt and enforce a truck route plan for Novato that limits trucks to arterial and collector streets, specifies weight limitations and fines for non-compliance. Install route signs as required.</i></p> <p><i>TR Program x.2: Develop measures to limit through traffic on residential streets when traffic studies confirm that traffic volumes on such streets exceed the Levels of Service established by the City.</i></p>	LS
4.5 C	Increased traffic volumes will reduce bicycle safety and increase the demand for bikeways.	PS	<p>Transportation Chapter Policy 10. Improve Traffic Safety.</p> <p>Transportation Chapter Policy 11. Continuation of Streets.</p> <p>Transportation Chapter Policy 18. Comprehensive Bicycle Path System.</p> <p>Transportation Chapter Policy 19. Bicycle Parking.</p>	LS
4.5-D	Increased traffic volumes will reduce pedestrian safety and increase the demand for pedestrian paths.	PS	<p>Transportation Chapter Policy 10. Improve Traffic Safety.</p> <p>Transportation Chapter Policy 11. Continuation of Streets.</p> <p>Transportation Chapter Policy 20. Provide Pedestrian Facilities.</p> <p>Community Identity Chapter 13. Pedestrian Paths.</p>	LS

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TABLE 6 (continued)
IMPACT AND MITIGATION SUMMARY

IMPACT		SIGNIFICANCE BEFORE MITIGATION	MITIGATION		SIGNIFICANCE AFTER MITIGATION
4.5	Transportation and Circulation (cont.)				
4.5-1:	Increased traffic volumes will increase congestion on City Streets	PS	<p>Transportation Chapter Policy 1. Transportation Chapter Policy 2. Transportation Chapter Policy 3. Transportation Chapter Policy 4. Transportation Chapter Policy 5. Transportation Chapter Policy 6. Transportation Chapter Policy 23. Transportation Chapter Policy 24.</p> <p>In addition, policies and programs under TR Objective 4 aimed at developing a safe circulation system and TR Objective 5 aimed at reducing dependence on the automobile reduce this impact.</p>	<p>Regional Transportation Efforts. Support Regional Alternatives to the Single-Occupant Vehicle. Coordinate Land Use with Transportation. Level of Service Standards. Roadway Improvements. Funding. Reducing Traffic Demand. Balanced Transportation Funding.</p>	PS
			<p><u>EIR Mitigations</u></p> <p>Several site-specific mitigations are required for intersections that would be significantly affected by buildout traffic. The analysis of the six intersections projected to operate at an unacceptable level of service and recommended intersection improvements are described in the traffic report on file with the City.</p> <p>The intersections and improvements are listed in the text of this document. The traffic reports list the specific intersection improvements for each intersection. These intersection-specific mitigations are incorporated into TR Policy 5 which calls for the required improvements when they become necessary to maintain Levels of Service.</p>		LS

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**TABLE 6 (continued)
IMPACT AND MITIGATION SUMMARY**

IMPACT		SIGNIFICANCE BEFORE MITIGATION	MITIGATION		SIGNIFICANCE AFTER MITIGATION
4.5	Transportation and Circulation (cont.)				
4.5-F	The Bel Marin Keys Industrial Park connector primarily benefits vehicular traffic between land uses in the Bel Marin Keys Boulevard area and S.R. 37 by reducing travel time between these two points.	B	None required		B
4.5-G	Buildout traffic will cause portions of Highway 101 and Highway 37 to operate at Level of Service F	PS	Transportation Chapter Policies 1-2 Transportation Chapter Policies 12-20 Transportation Chapter Policy 23	Reduce regional traffic growth. Reduce dependence on the automobile. Reduce travel demand.	S
4.5-H	Buildout traffic must be in compliance with the Congestion Management Plan.	PS	Transportation Chapter Policy 1.	Regional Transportation Efforts.	LS
4.6	Air Quality				
4.6-A	Development in accordance with the Draft General Plan would alter traffic volumes and change concentrations of localized pollutants such as carbon monoxide near streets and intersections.	LS	Environment Chapter Policy 32. Environment Chapter Policy 33. Environment Chapter Policy 34. In addition, Transportation Chapter Policies 12-20 listed above address this impact.	Regional Planning to Improve Air Quality. Vehicle Trips. Local Efforts.	LS
4.6-B	Development in accordance with the Draft General Plan would result in additional emissions from vehicles and stationary sources affecting the regional air basin.	LS	Same mitigations as listed for Impact 4.6-A.		LS
4.7	Noise				
4.7-A	The proposed buildout of the preferred plan would result in a substantial increase in noise levels along certain roadway segments.	PS	Noise Chapter Policy 36. Noise Chapter Policy 37.	Maintain Noise and Land Use Compatibility Standards. Mitigate Noise Impacts.	PS

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**TABLE 6 (continued)
IMPACT AND MITIGATION SUMMARY**

IMPACT		SIGNIFICANCE BEFORE MITIGATION	MITIGATION	SIGNIFICANCE AFTER MITIGATION
4.7	Noise (continued)			
4.7-A	(continued)		EIR Mitigations: The following program should be added to SF Policy 37: <i>SF Program 37.5: Investigate mitigation measures for projects that would cause a substantial increase in noise (i.e., cause the Ldn to increase above 60 dBA or cause an increase of 5 dBA Ldn or more in the noise environment) in adjacent residential areas or in residential areas affected by traffic generated by the proposed project.</i>	LS
4.7-B	New development may be proposed in areas which have an incompatible noise environment.	PS	Same mitigations as listed for Impact 4.7-A.	LS
4.8	Aesthetics			
4.8-A	Future development, unless carefully sited and designed, may be inconsistent with the existing scale, style, and character of existing development in the surrounding area. This development could result in views that are aesthetically offensive.	PS	Environment Chapter Policies 1-8 These policies protect vegetation and wildlife Habitat along streams via a Watercourse Protection Overlay Zone. Environment Chapter Policies 9-10 These policies protect wetlands by establishing a Wetlands Protection Overlay Zone. Environment Chapter Policies 11-17 lying These restrict development in low areas east of Highway 101 by establishing a Bayfront Overlay Zone. Environment Chapter Policies 20-22 These protect existing agricultural uses. Environment Chapter Policies 23-26 These provide protections for existing woodlands. Environment Chapter Policy 27. Protect Scenic Resources. Environment Chapter Policies 41-43 These policies protect important open space properties.	

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TABLE 6 (continued)
IMPACT AND MITIGATION SUMMARY

IMPACT		SIGNIFICANCE BEFORE MITIGATION	MITIGATION	SIGNIFICANCE AFTER MITIGATION
4.8	Aesthetics(continued)			
4.8-A	(continued)		<p>Land Use Chapter Policy 9. Constraints Analysis.</p> <p>Community Identity Chapter Policy 1. Compatibility of Development with Surroundings.</p> <p>Community Identity Chapter Policy 2. Traditional Site Design.</p> <p>Community Identity Chapter Policy 3. Discourage Repetition.</p> <p>Community Identity Chapter Policy 6. Landscaping.</p>	PS
			<p><u>EIR Mitigations:</u></p> <p>The following programs shall be added to Policy 27 of the Environment Chapter: <i>EN Program 27.3 Prohibit development within 100 vertical feet of a designated ridgeline within a scenic area and from protruding above a designated ridgeline as seen from a public right-of-way one-eighth of a mile or more away, unless this would prevent all development on a property.</i></p> <p>In addition, the following program is required. <i>EN Program 27.4 On all open and grassy hillsides, development should be clustered well below the ridge, in the least visually prominent part of the site.</i></p>	LS
4.8-B	Future development may substantially alter views along designated view corridors and/or at visual entry points to the City.	PS	Same policies listed as mitigations under Impact 4.8-A	PS

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TABLE 6 (continued)
IMPACT AND MITIGATION SUMMARY

IMPACT		SIGNIFICANCE BEFORE MITIGATION	MITIGATION	SIGNIFICANCE AFTER MITIGATION
4.8	Aesthetics(continued)			
4.8-B	(continued)		<p><u>EIR Mitigations:</u></p> <p>The following program shall be added to Land Use Policy 9:</p> <p><i>LU Program 9.3: All development along the west side of the freeway from the northern edge of the City to Atherton Avenue and from the southern edge of the City to Ignacio Boulevard shall be subject to the requirement to prepare a Constraints Analysis as part of any development application.</i></p>	LS
4.8-C	Future development will potentially generate increased light and glare.	PS	Community Identity Chapter Policy 11. Lighting Design Guidelines.	PS
			<p><u>EIR Mitigations:</u></p> <p>CI Policy 11 should be reworded to state:</p> <p><i>CI Policy 11 <u>Lighting Design Guidelines</u>. Amend the Zoning Ordinance to incorporate design guidelines for exterior lighting addressing issues such as security, appearance and intensity. The guidelines shall provide the types of lights and lighting to be used in various types of development so that new projects do not substantially adversely affect views of open space or other valuable City views.</i></p>	LS
4.8-D	The construction of future sound walls along Highway 101 and the construction of other public facilities (e.g., power lines) will alter existing views.	PS	Community Identity Chapter Policy 8. Undergrounding Utilities. Safety Chapter Policy 37. Mitigate Noise Impacts.	PS

NOTE:

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S	= Significant
LS	= Less than Significant
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TABLE 6 (continued)
IMPACT AND MITIGATION SUMMARY

IMPACT		SIGNIFICANCE BEFORE MITIGATION	MITIGATION		SIGNIFICANCE AFTER MITIGATION
4.8	Aesthetics(continued)				
4.8-D	(continued)		<u>EIR Mitigations:</u> The City shall request that Caltrans perform a visual analysis for all new, proposed soundwalls in Novato. The analysis shall show existing and future views at critical points along the route. These data will be used to determine whether the sound walls should be constructed.		LS
4.9	Wastewater				
4.9-A	Future development will generate wastewater that must be treated by the existing treatment facility.	PS	Public Facilities Chapter Policy 1. Public Facilities Chapter Policy 3. Public Facilities Chapter Policy 5. Economic Development and Fiscal Vitality Chapter Policy 24. Economic Development and Fiscal Vitality Chapter Policy 25. Economic Development and Fiscal Vitality Chapter Policy 26. Land Use Chapter Policy 7. Land Use Chapter Policy 8.	Management of Public Facilities. Management of Public Services. Water Conservation. Development Pays Its Fair Share of Capital Expense. Adequate Capital Funding for Other Agencies. Fiscal Impact Assessment. Growth Management. Development to Pay Fair Share.	LS
4.9-B	Future development will generate wastewater that must be disposed of at Novato Sanitary District facilities.	LS	Same mitigations as listed for Impact 4.9-A.		LS
4.9-C	Growth in certain areas of the City may generate wastewater that cannot be adequately collected by existing sewer collectors.	PS	Same mitigations as listed for Impact 4.9-A.		LS

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TABLE 6 (continued)
IMPACT AND MITIGATION SUMMARY

IMPACT		SIGNIFICANCE BEFORE MITIGATION	MITIGATION		SIGNIFICANCE AFTER MITIGATION
4.10	Water				
4.10-A	Development will increase the demand for public water.	PS	Public Facilities Chapter Policy 1. Public Facilities Chapter Policy 3. Public Facilities Chapter Policy 4. Public Facilities Chapter Policy 5. Land Use Chapter Policy 7. Land Use Chapter Policy 8.	Management of Public Facilities. Management of Public Services. Potable Water. Water Conservation. Growth Management. Development to Pay Fair Share.	LS
4.10-B	Development will require construction and/or replacement of water mains, storage facilities, treatment facilities, and pump stations.	PS	The mitigations listed under Impact 4.10-A are all applicable to Impact 4.10-B.		LS
4.11	Fire Protection and Emergency Response				
4.11-A	New development will increase the demand for fire protection services.	PS	Safety Chapter Policy 12. Safety Chapter Policy 13. Safety Chapter Policy 14. Safety Chapter Policy 15. Safety Chapter Policy 16. Safety Chapter Policy 17. Safety Chapter Policy 18. Safety Chapter Policy 19. Safety Chapter Policy 20. Safety Chapter Policy 21.	Interagency Cooperation. Maintain an Updated Multihazard Emergency Plan. Emergency Facilities. Utilize the Fire Hazard Severity Scale. Minimize Fire Risk in New Development. Help Maintain a High Level of Fire Protection. Vegetation Management. State Building Code. Fire Hydrant Water Flows. Mutual Aid Agreements.	

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TABLE 6 (continued)
IMPACT AND MITIGATION SUMMARY

IMPACT		SIGNIFICANCE BEFORE MITIGATION	MITIGATION	SIGNIFICANCE AFTER MITIGATION
4.11	Fire Protection and Emergency Response (continued)			
4.11-A	(continued)		Public Facilities Chapter Policy 4. Management of Public Services. Land Use Chapter Policy 7. Growth Management. Land Use Chapter Policy 8. Development to Pay Fair Share.	PS
			<p><u>EIR Mitigations:</u></p> <p>Program 17.1 should be replaced with the following program:</p> <p><i>Program 17.1 Continue to require all new development to meet the adopted fire safe regulations originally developed by the State and currently adopted as an appendix to the Fire Code.</i></p> <p>The following wording should be added to Program 17.5:</p> <p><i>All development that includes private access roads or fire roads shall provide access rights and keys to any gates to the Novato Fire Protection District and shall be deeded accordingly.</i></p>	LS

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TABLE 6 (continued)
IMPACT AND MITIGATION SUMMARY

IMPACT		SIGNIFICANCE BEFORE MITIGATION	MITIGATION	SIGNIFICANCE AFTER MITIGATION
4.11	Fire Protection and Emergency Response (continued)			
4.11-A	Continued		<p>An additional policy related to fire hazard on public lands is suggested. This policy would state:</p> <p><i>Policy xFire Hazard on Public Lands. Public lands should be managed to minimize the chances of a wildfire that would affect residences and businesses in Novato.</i></p> <p><i>Program x.1 The City should request that the Marin County Open Space District and other public agencies to assess the wildland fire hazard on their holdings within and adjacent to the City. If these assessment indicate a significant hazard to residents of Novato, the City should request that the agency take steps to reduce that fire hazard to an acceptable level.</i></p>	
4.11-B	New development will require construction of new water mains to ensure adequate fireflows.	PS	<p>Safety Chapter Policy 16.</p> <p>Safety Chapter Policy 20.</p>	<p>Minimize Fire Risk in New Development.</p> <p>Fire Hydrant Water Flows.</p>
4.11-C	New development may expand the use, storage, and transport of hazardous materials. Spills or explosions involving such materials could expose members of the public to a health hazard and require fire department response to major events.	PS	<p>Safety Chapter Policy 27.</p> <p>Safety Chapter Policy 28.</p> <p>Safety Chapter Policy 29.</p> <p>Safety Chapter Policy 30.</p>	<p>Measures to Reduce Hazards.</p> <p>CEQA Review of Proposed TSD Facilities.</p> <p>Regulate Hazardous Materials.</p> <p>Truck Routes for Hazardous Materials Transport.</p>

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TABLE 6 (continued)
IMPACT AND MITIGATION SUMMARY

IMPACT		SIGNIFICANCE BEFORE MITIGATION	MITIGATION		SIGNIFICANCE AFTER MITIGATION
4.11	Fire Protection and Emergency Response (continued)				
4.11-D	New development will increase calls for emergency medical response.	PS	Safety Chapter Policy 25. Safety Chapter Policy 26. Public Facilities Chapter Policy 1. Public Facilities Chapter Policy 4. Land Use Chapter Policy 7. Land Use Chapter Policy 8.	Maintain High Level of Emergency Medical Response. Maintain Novato Community Hospital's Emergency Department. Management of Public Facilities. Management of Public Services. Growth Management. Development to Pay Fair Share.	PS
4.12	Police Protection				
4.12-A	New development will require police protection.	PS	Safety Chapter Policy 22. Safety Chapter Policy 23. Safety Chapter Policy 24. Public Facilities Chapter Policy 1. Public Facilities Chapter Policy 3. Land Use Chapter Policy 7. Land Use Chapter Policy 8. Economic Development and Fiscal Vitality Chapter Policy 24. Economic Development and Fiscal Vitality Chapter Policy 25. Economic Development and Fiscal Vitality Chapter Policy 26.	Demand for Police Services. Maintain Adequate Civilian Employees and Equipment. Community Oriented Services. Management of Public Facilities. Management of Public Services. Growth Management. Development to Pay Fair Share. Development Pays Its Fair Share of Capital Expense. Adequate Capital Funding for Other Agencies. Fiscal Impact Assessment.	PS

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TABLE 6 (continued)
IMPACT AND MITIGATION SUMMARY

IMPACT		SIGNIFICANCE BEFORE MITIGATION	MITIGATION		SIGNIFICANCE AFTER MITIGATION
4.13	Schools				
4.13-A	New development will generate additional students that must be housed and educated at Novato schools.	PS	Public Facilities Chapter Policy 1. Public Facilities Chapter Policy 3. Land Use Chapter Policy 7. Land Use Chapter Policy 8.	Management of Public Facilities. Management of Public Services. Growth Management. Development to Pay Fair Share.	PS
4.14	Solid Waste				
4.14-A	Future development in Novato will generate additional amounts of solid waste.	PS	Environment Chapter Policy 38. Environment Chapter Policy 39.	Solid Waste Reduction. On-Site Recycling Areas.	LS
4.15	Recreation				
4.15-A	An increasing population will increase the demand for recreational facilities.	PS	Environment Chapter Policy 44. Environment Chapter Policy 45. Environment Chapter Policy 46. Environment Chapter Policy 47. Environment Chapter Policy 48. Environment Chapter Policy 49. Environment Chapter Policy 50. Land Use Chapter Policy 7. Land Use Chapter Policy 8.	Park and Recreation Facilities. Existing Park Land and Facilities. Hamilton Field. Greenways. Annual Review of Open Space, Parks, and Trails Acquisition. Integrated Trails System. Community Facilities. Growth Management. Development to Pay Fair Share.	LS
4.16	Energy				
4.16-A	An increasing population will increase the demand for fuel and energy.	LS	Transportation Chapter Policies and Programs Environment Chapter Policy 28. Environment Chapter Policy 29. Environment Chapter Policy 30. Environment Chapter Policy 31.	Energy Conservation. Energy Conservation Measures in Buildings. Energy Efficiency in Public Programs. Development Review Process.	LS

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TABLE 6 (continued)
IMPACT AND MITIGATION SUMMARY

IMPACT		SIGNIFICANCE BEFORE MITIGATION	MITIGATION		SIGNIFICANCE AFTER MITIGATION
4.16	Energy (continued)				
4.16-B	New development could place people at risk from exposure to electromagnetic fields.	PS	Safety Chapter Policy 31. Safety Chapter Policy 32. Safety Chapter Policy 33.	Consider Electromagnetic Field (EMF) Radiation in Land Use Decisions. Siting and Construction of Electrical Transmission Facilities. Siting of Schools.	LS
4.17	Land Use				
4.17-A	New development may convert agricultural land to non-agricultural uses.	PS	Environment Chapter Policy 15 Environment Chapter Policy 20. Environment Chapter Policy 21. Environment Chapter Policy 22. Land Use Designations Map.	Agriculture in Bayfront Areas. Preserve Agricultural Lands. Environmental Impacts of Agriculture. Mariculture.	LS
4.17-B	Development of vacant lands may convert lands that are potential public open space.	PS	Environment Chapter Policy 41. Environment Chapter Policy 42. Environment Chapter Policy 43. Land Use Designations Map.	Open Space of Countywide Importance. Specific Use Objectives for Open Space. Access to Open Space.	LS
4.17-C	Development of lands near GROSS Field airport could put people and improvements at risk.	PS	Safety Chapter Policy 34. Safety Chapter Policy 35.	Minimize Hazards of the GROSS Field Airport. Maintain County Airport Planning.	LS
4.17-D	Adoption and implementation of the Downtown Specific Plan could alter the character of the area.	LS	Community Identity Chapter Policies 14-28 include a long list of specific design requirements.		LS

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TABLE 6 (continued)
IMPACT AND MITIGATION SUMMARY

IMPACT		SIGNIFICANCE BEFORE MITIGATION	MITIGATION	SIGNIFICANCE AFTER MITIGATION
4.17	Land Use (continued)			
4.17-E	Adoption of the Draft General Plan includes an extension of the City's Sphere of Influence.	LS	No mitigation required	LS
4.17-F	The Draft General Plan includes land use designations for the Sphere of Influence which are different from the designations provided in the Marin Countywide Plan. The Draft General Plan could induce additional development within the Sphere of Influence.	PS	Land Use Chapter Policy 10. Land Use Chapter Policy 11. Land Use Chapter Policy 12. Land Use Chapter Policy 13. Boundaries of Sphere of Influence. Annexations to Sanitary District. Referrals. Annexation Guidelines.	LS
4.17-G	Allowing residential development in areas currently used for commercial uses could alter the character of surrounding neighborhoods.	PS	Community Identity Chapter Policy 28. Preserve Residential Neighborhoods Adjacent to Downtown.	LS
4.17-H	Vacant land will be converted to housing and commercial/industrial development.	PS	All policies of the Environment Chapter, the Public Facilities Chapter, and the Land Use Chapter mitigate this impact.	LS

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4.0 ENVIRONMENTAL IMPACT ANALYSIS SECTION

4.0 ENVIRONMENTAL IMPACT ANALYSIS SECTION

The following section of the EIR includes an analysis of potential environmental impacts resulting from implementation of the Draft Novato General Plan. The analysis is at the level of specificity required for a plan document. The *CEQA Guidelines* Section 15146 state:

"The degree of specificity required in an EIR will correspond to the degree of specificity involved in the underlying activity which is described in the EIR.

(a) An EIR on a construction project will necessarily be more detailed in the specific effects of the project than will be an EIR on the adoption of a local general plan or comprehensive zoning ordinance because the effects of the construction can be predicted with greater accuracy.

(b) An EIR on a project such as the adoption or amendment of a comprehensive zoning ordinance or a local general plan should focus on the secondary effects that can be expected to follow from the adoption or amendment, but the EIR need not be as detailed as an EIR on the specific construction projects that might follow."

The EIR analysis focuses on the cumulative impacts resulting from development of all undeveloped or underdeveloped properties in Novato. In developing buildout projections for the Draft General Plan, the City staff and its General Plan consultants identified a number of large sites where development could occur in the future. Buildout of these sites comprise about 79 percent of the total residential buildout and 65 percent of the non-residential buildout that could occur under the Draft General Plan; the remaining buildout would be infill of smaller lots or redevelopment of underutilized lots. The major development sites are listed below in Table 7 and shown on Figure 3. The table shows the acreage of the site and the buildout potential for the site under the Draft General Plan. This buildout potential was developed by City staff based on staff's familiarity with each site and its potential development constraints. The buildout potential is considered the maximum that would be possible on the site.

In identifying impacts and mitigation measures, these major development sites were reviewed. Where appropriate, the analyses in the following sections refer to conditions on these major sites. Discussion of these sites is intended to indicate the general scope of identified impacts; the sites are used as examples of the type of impact. This discussion of impacts on various sites is not intended to be exhaustive nor, in some cases, completely accurate since identification of certain impacts must await future field surveys of these sites. Detailed site analysis is not feasible for this program EIR and will occur at the time there is a development application for the site. Site-specific impact analysis and development of mitigations will be performed consistent with CEQA requirements. These future analyses and the projects that may be approved will be guided by the general policies and programs of the Draft General Plan. After evaluation of site-specific conditions, the City may determine that impacts are less or greater than described in this Draft EIR.

Table 7
Major Development Sites

Site No.	Site Designation	Acres	Residential Potential (DUs)	Non-Res. Potential (Sq.Ft.)
1	Doe Hill	221	4	0
2	Brookside	55	5	0
3	Sutro Avenue/Novato Blvd.	20	75	0
4	San Marin Dr./San Andreas Dr.	22	151	5,440
5	San Marin Dr./San Carlos Way	28	118	0
6	San Marin Business Park	63	0	1,098,757
7	Bahia	639	514	0
8	Black Point	90	10	0
9	Rudnick	45	44	0
10	Area North of Olive Avenue	12	(-44)	163,083
11	Pinheiro Ranch	47	378	261,360
12	Hillside West of 7th Street	17	7	0
13	Hillside South of Center Road	13	12	0
14	Hillside South of Center Road	34	32	0
15	Hillside South of Center Road	48	18	0
16	Diablo Triangle	8	125	0
17	Redwood Blvd., So. of De Long	11	43	47,043
18	East of De Long Ave.	35	12	0
19	Windmill House	3	0	53,666
20	Freeway/Railroad Crossing	13	0	219,542
21	Renaissance Faire Site	231	85	(-30,792)
22	Leveroni	164	3	0
23	Caltrans	6	0	108,900
24	Hanna Ranch	19	0	331,056
25	Hillside W. of Sunset Parkway	34	18	0
26	New Hamilton Partnership	215	955	825,000
27	Anderson-Rowe	59	312	0
28	Bel Marin Keys (eliminated from analysis because the site is outside City's SOI)	NA	NA	NA
29	Hamilton Runway	723	0	0
30	Hamilton Re-use, Non-Residential	40	0	723,096
31	Independent-Journal	21	14	33,454
32	Pacheco Ranch	85	1	0
33	West of Gness Field	99	3	0
34	St. Vincent's/Silveira	272	3	0
35	Indian Valley Colleges	333	0	403,764
36	City Portion of Hamilton	200	0	0
37	Community Hospital	7	0	80,415
38	Olive Ridge Area	12	5	0
39	Alvarado Inn	5	20	8,712
40	Buck Center for Research in Aging	91	135	220,000
<u>Total</u>		<u>4,040</u>	<u>3,058</u>	<u>4,552,496</u>
	Residential Additions to 7 Neighborhood Commercial Centers	NA	614	0
	Residential Additions to Downtown Specific Plan Area	NA	274	0
<u>Total</u>		<u>4,040</u>	<u>3,946</u>	<u>4,552,496</u>

Source: Novato Community Development Department, November, 1995

FIGURE 3

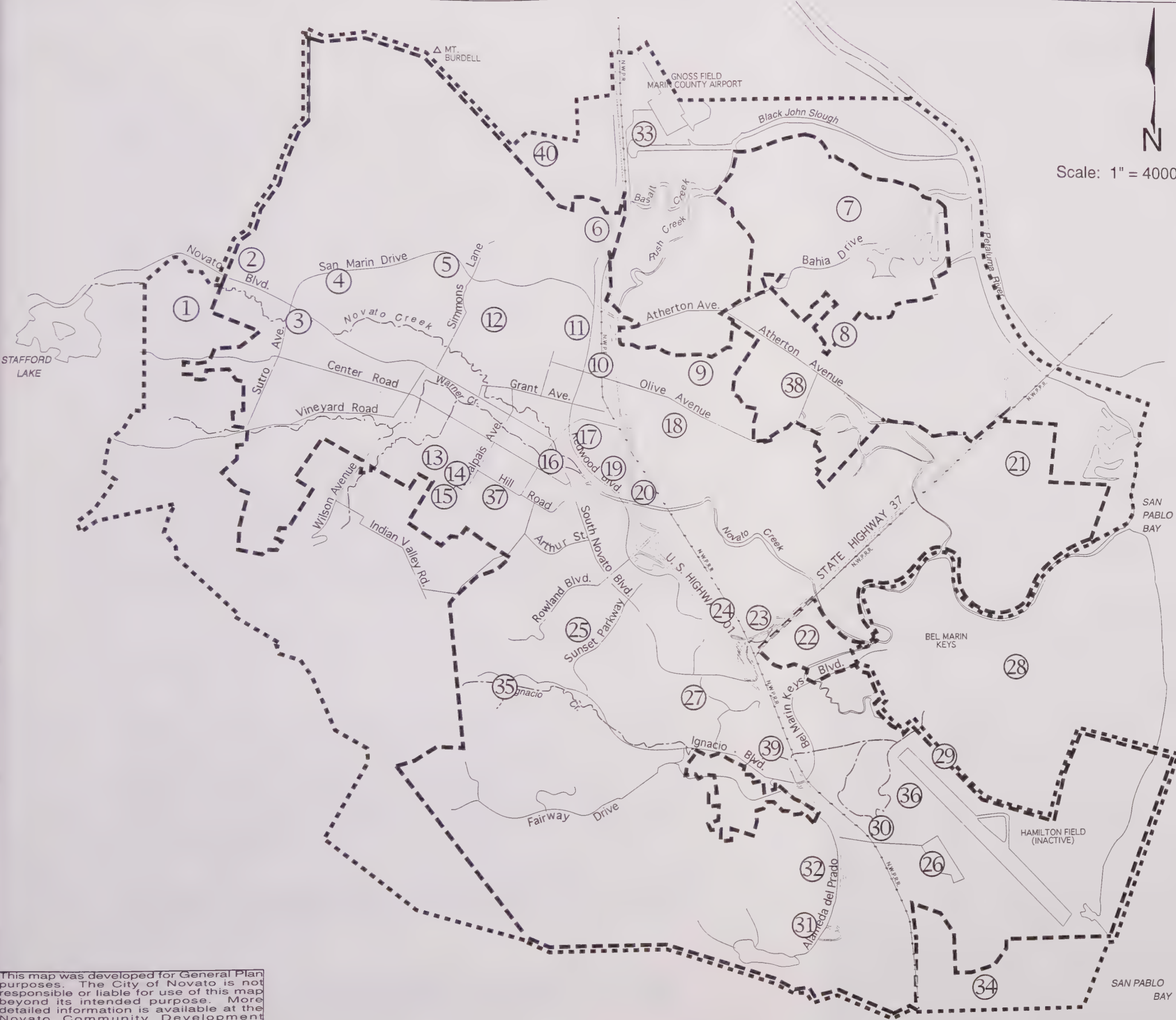
MAJOR DEVELOPMENT SITES

- 1 Doe Hill
- 2 Brookside
- 3 Sutro Avenue/Novato Boulevard
- 4 San Marin Drive/San Andreas Drive
- 5 San Marin Drive/San Carlos Way
- 6 San Marin Business Park
- 7 Bahia
- 8 Black Point
- 9 Rudnick
- 10 Area North of Olive Avenue
- 11 Pinheiro Ranch
- 12 Hillside West of 7th Street
- 13
- 14 } Hillside South of Center Road
- 15 }
- 16 Diablo Triangle
- 17 Redwood Boulevard, South DeLong
- 18 East of DeLong Avenue
- 19 Windmill House
- 20 Freeway/Railroad Crossing
- 21 Renaissance Faire Site
- 22 Leveroni
- 23 CalTrans
- 24 Hanna Ranch
- 25 Hillside West of Sunset Parkway
- 26 New Hamilton Partnership
- 27 Anderson-Rowe
- 28 Bel Marin Keys
- 29 Hamilton Runway
- 30 Hamilton Reuse - Non-Residential
- 31 Independent-Journal
- 32 Pacheco Ranch
- 33 West of Gness Field
- 34 St. Vincent's/Silveira
- 35 Indian Valley Colleges
- 36 City portion of Hamilton
- 37 Community Hospital
- 38 Olive Ridge Area
- 39 Alvarado Inn
- 40 Buck Center for Research in Aging

City of Novato General Plan Revision
Draft
Environmental Report

----- City Limit Line
..... Sphere Of Influence

Revised & Recirculated
November, 1995



This map was developed for General Plan purposes. The City of Novato is not responsible or liable for use of this map beyond its intended purpose. More detailed information is available at the Novato Community Development Department.

Notes to Table 7

1. The column showing residential potential indicates the maximum number of new residential units possible on the site given the land use designation provided in the Draft General Plan and City staff's preliminary review of site constraints given policies and programs of the Draft General Plan.
2. The column showing non-residential potential indicates the maximum amount of commercial, office, or industrial space that could be constructed on the site given the land use designation provided in the Draft General Plan and City staff's preliminary review of site constraints given policies and programs of the Draft General Plan.
3. Since this Table was originally developed, Site No. 1 (Doe Hill) has been acquired as permanent public open space. As such, this site will not be used when developing examples of impacts on potential development sites.
4. The original list included the Bel Marin Keys site (Site No. 28). Because this site is not within the existing or proposed Sphere of Influence, the direct impacts of future development were not assessed. The contribution of the project to traffic was included in the traffic analysis.

Development applications as well as EIRs have been prepared on proposed developments on several of these major sites. Final approval of these pending applications must take into account consistency with this new General Plan, once it is adopted. It should also be noted that individual projects are subject to the existing City standards for new development as codified in the City Code, especially standards and requirements set forth in Chapter IV ("Building and Housing"), Chapter V ("Development Standards"), Chapter VI ("Excavations and Fills"), Chapter IX ("Land Subdivision"), Chapter X ("Parks and Recreational Facilities"), Chapter XV ("Streets and Sidewalks"), Chapter XVII ("Trees and Shrubs"), Chapter XIX ("Zoning"), and Chapter XX ("Growth Management Policy").

The discussion of each area of potential impact is organized in the following manner.

A. Setting

This section includes a description of the existing physical and environmental conditions as regards the particular environmental factor under consideration (per *CEQA Guidelines* Section 15125). The primary source for the data in this section is the *Existing Conditions Report* prepared by the City of Novato. This report was specifically developed to describe the existing conditions in Novato, and it was intended to provide the "setting" section of this EIR. The data in that report has been augmented in several areas with data taken from other background reports as well as several recent EIRs on development projects within the City of Novato or its Sphere of Influence.

In particular, data on the environmental setting were extracted from the following EIRs and reports. All these reports are on file for review at the Novato Community Development Department.

1. *Renaissance Estates General Plan Amendment, Rezoning, and Master Plan Draft EIR*, February, 1993, ESA (State Clearinghouse No. 91063089). This EIR assesses impacts and identifies mitigations for a proposed residential and golf course development in eastern Novato. As of this writing, the City has approved development on this site.
2. *Hamilton Field Project Revised SEIR and Final Subsequent EIR*, March, 1993, EIP Associates (State Clearinghouse No. 92113005). This EIR assesses impacts of new residential and commercial development on a portion of the Hamilton Field in southeast Novato. This project has been approved.
3. *Vintage Oaks at Novato Regional Shopping Center Final EIR*, July, 1990, EIP Associates (State Clearinghouse No. 89030120). This EIR assesses impacts and identifies mitigations for the Vintage Oaks shopping center. This project has been constructed.
4. *The 1990 Bahia Master Plan Revision Revised Draft EIR and Final EIR*, April, 1992 and November, 1992, Earth Metrics Inc. (State Clearinghouse No. 9003007). This EIR assesses impacts and identifies mitigation measures for a residential development in northeast Novato. Final action has not been taken on this project.
5. *Bel Marin Keys Final EIR/EIS*, August, 1993, ESA (State Clearinghouse No. 89072519). This EIR addresses a residential development on property within the jurisdiction of Marin County. The site is east of the Novato SOI. The project was denied by the County, and a new application for development is being completed.
6. *Marin County Airport (Gross Field) EIR/Environmental Assessment*, June, 1988, Cortright & Seibold (State Clearinghouse No. 86101424). This EIR assesses the existing airport located northeast of Novato.
7. *Novato General Plan Draft and Final EIRs*, July and September, 1981, City of Novato. This is the EIR prepared for the City General Plan that will be replaced by the Plan being assessed in this EIR.
8. *Rudnick Estates Environmental Data Submission and Precise Development Plan*, November, 1992, Rudnick Group. This document is part of a development application for a residential development located in eastern Novato. An EIR will be prepared on this project.
9. *Hamilton Army Airfield Disposal and Reuse Draft EIS*, January, 1995, U.S. Department of the Army. This EIS assesses impacts from development of a portion of Hamilton Field. The City has approved a Reuse Plan for the project.
10. *Novato Community Hospital Relocation Project Draft EIR*, November, 1994, ESA (State Clearinghouse No. 92123073). This EIR assesses a proposed hospital located just east of Highway 101. This project has been approved.
11. *Buck Center for Research in Aging Revised Final EIR*, January, 1994, EIP Associates (State Clearinghouse No. 90030955). This EIR assesses a medical research facility with ancillary housing in the area west of Highway 101 just north of the City. This project has been approved.
12. *Marin Countywide Plan Final EIR*, September 1993, Marin County Planning Department (State Clearinghouse No. 91093072). This EIR assesses the impacts resulting from adoption of the County's General Plan. The Plan has been adopted by the County.
13. *The Marin Countywide Plan* (including all Technical Reports), January, 1994, Marin County Community Development Agency.

The City Council has previously reviewed and certified all these documents except Nos. 5, 8, 11, 12, and 13.

B. Potential Impacts and Mitigations

This section includes a description of any environmental constraints that could affect General Plan implementation and an analysis of all potentially significant impacts that would or could occur if buildout per the Draft General Plan is approved and constructed (per *CEQA Guidelines* Section 15126a and b). The analysis begins with a section that describes the criteria that will be used to judge the significance of potential impacts.

For each significant impact that is identified, there is a listing of feasible measures which can eliminate or diminish identified impacts. First, there is a list of mitigations already incorporated in the Draft General Plan (please note that the mitigations taken from the Draft General Plan are italicized in the text; they are direct quotes from the Draft Plan, and the EIR preparers have not corrected any typographic or other errors) In fact, these mitigations could be included as part of the project description. However, they are listed as "mitigations" in this EIR to clearly demonstrate the "self-mitigating" nature of the Draft General Plan. This list is followed by a list of any additional mitigations required to satisfactorily reduce the level of impact. Mitigations that include the words "shall," "will," or "must" are necessary to adequately mitigate potentially significant impacts. Mitigations using the words "should" or "would" are recommended to further reduce the level of impact, but are not necessary to reduce the identified impacts to a level below significance.

It is noted that the Draft EIR was prepared at the same time that the policies and programs in the Draft General Plan were prepared. The EIR preparers often recommended additional mitigation measures when reviewing preliminary draft versions of the General Plan. Most of these recommendations were incorporated into the Draft Plan. As such, few new mitigation measures are recommended in this report.

Finally, it is again clearly stated that this is a program EIR and not an EIR on specific developments or properties within Novato. When this EIR concludes that the overall impacts have been mitigated to a level that is less than significant, this conclusion does not imply that specific developments on particular properties may not have significant site-specific or project-specific impacts. This EIR does not eliminate the need for site-specific environmental review, including, in many cases, the need for a Constraints Analysis as required by the Draft General Plan. Future development applications must be assessed for consistency with allowable land uses as well as all other policies and programs included in the Draft General Plan. Consistency with these policies and programs may result in approval of fewer units or less non-residential development on a site than the maximum allowed by the Land Use Designations Map. This EIR assesses cumulative effects from the maximum allowed buildout. Actual buildout over the next twenty years will likely be less than this maximum potential.

4.1 GEOLOGY AND SOILS

A. Setting

A complete description of geologic and soils conditions is contained in the *Existing Conditions Report* (Chapter 2) and in the Safety and Noise Chapter of the Draft General Plan. Those sections are incorporated herein as the environmental setting. The following summarizes those reports. In addition, the *Environmental Hazards Element Technical Report #2 - Seismic Hazards in Marin* (August 30, 1991), prepared as part of *The Marin Countywide Plan*, contains a complete description of geologic-related hazards in the Novato area; this report is also incorporated herein by reference.

The City of Novato and Marin County as a whole demonstrate a wide variety of geologic conditions. The great variation of local geologic types and overall stability reflect both the high level of seismic activity of California's west coast and the nature of the deposits of the San Francisco Bay. The surface geologic conditions of Novato are dominated by two distinct geologic types: (1) the bay plains and marshlands consisting of bay mud deposits and (2) the uplands consisting of everything above the bay muds, including alluvial stream deposits and the moderate to steeply sloping hills and ridges surrounding the Planning Area.

Bay Muds and Marshlands

For the past 10,000 years, silt and mud deposits have accumulated as a result of erosion and the tidal influences of San Francisco Bay. Prior to settlement and development of the region, these marsh areas were essentially flat with an elevation generally below mean sea level. These lands would often flood during periods of high tide. Large portions of San Francisco Bay have since been "reclaimed" through the construction of levees and drainage channels. These lands were initially used for agriculture, but, increasingly, these reclaimed marshlands have been utilized for urban development.

Once drained, these soils take on the appearance of solid ground. Such soils generally support the weight of heavy farm equipment. Despite this appearance of stability, beneath the soil surface may be thick deposits of saturated silt and mud. This mud lacks the stability to support the static forces of fills used for urban development, and over time the weight of fill soils forces the compaction of underlying muds. This compaction can occur for many years and can result in differential or uneven settling which damages roads, infrastructure, and buildings. In the event of an earthquake, the underlying mud may become fluid-like in a process known as liquefaction, and the bay mud's stability can be greatly reduced. Also, during an earthquake these muds transfer the seismic energy in a way that is much more destructive than solid bedrock. Therefore, urban development on such land is exposed to a very high level of geologic risk, and current knowledge and engineering practices may be insufficient to adequately mitigate risks.

Upland Geology

The *Existing Conditions Report* describes the upland geology in detail. The pertinent discussion regarding future land use planning describes the location of areas with a history of landsliding and unstable slopes. These areas are mapped in that report.

Seismic Hazards

Novato is located in a seismically active region where damaging earthquakes are expected events. Seismic risk is assumed by every occupant and developer in Novato because of the area's high seismic hazard. However, planning may reduce the risk by requiring adequate geotechnical investigation of particular sites and avoiding high risk areas for locating certain structures or land uses.

The only "active" fault in Marin County is the San Andreas Fault located 12-14 miles west of the City; this fault is subject to a maximum credible earthquake of 8.3 (Richter scale). However, a recent study of earthquake hazard prepared by ABAG (ABAG, 1995) concludes that the chance of a major earthquake on the northern segment of the San Andreas Fault in the next 30 years is only 2 percent. An inactive fault, the Burdell Mountain Fault, crosses the northeastern portion of the City.

The Hayward Fault (located about 8 miles east of the eastern edge of the Novato Sphere of Influence) and the Healdsburg-Rodgers Creek Fault located northeast of the City are both active faults with maximum credible earthquakes of 7.5 and 7.2 respectively. The ABAG report predicts the probability of an earthquake of a magnitude of 7.1 during the next 30 years on the Healdsburg-Rodgers Creek Fault as 0.22 (i.e., 22 percent chance) and for an earthquake of magnitude of 7.1 on the northern Hayward Fault as 0.28 (i.e., 28 percent chance). The most severe earthquake effects in Novato would be from the Hayward Fault. The results of a 7.1 event on the northern segment of the Hayward Fault is shown on Figure 4 (please note that this is a schematic rendering of a detailed map; the actual map generated by ABAG is on file with the Novato Community Development Department). Table 8 from the ABAG report describes the various categories shown on Figure 4.

The ABAG mapping confirms earlier analyses prepared by Salem Rice (1975) and seismic hazard mapping contained in the *Marin Countywide Plan*. All these studies show the extreme hazards involved with constructing on bay muds.

Landslides

The hillsides surrounding the City of Novato are subject to landslide potential of varying degrees due to a number of factors. The five primary factors are slope of hillside, soil characteristics, degree of saturation, human activity, and seismic activity. While steep slopes are not inherently unstable, such areas can become unstable as a result of urban development such as road cuts and grading operations. Soils within the Novato Planning Area are often highly expansive, which can lead to a tendency for slow downhill creep and debris flows on moderate to steeply sloping hillsides. Soil saturation may occur during periods of heavy rainfall, and such saturated soils become much more susceptible to landslides. Human activities such as urban development, grading operations, hillside irrigation, and concentration of runoff can contribute to landslide potential. The potential for landslides under any of these conditions will be compounded in the event of significant seismic activity.

Any one of the above conditions can result in ground failure. Because of the complexity of landslides, a number of factors are likely to combine to trigger a landslide. In any event, activities which will increase the potential for landslides should be avoided in areas of unstable soils. One practice of particular concern is grading cuts at the base of slopes. Such cuts are often made to maximize building sites at the base of hills. These cuts have the potential to destabilize entire slopes by removing the base material of historic slide

areas. Because of the potential impacts of grading operations in areas of historic landslides and soil instabilities, detailed geologic studies should evaluate not only the immediate site

Table 8
Modified Mercalli Intensity Scale

MMI Value	Summary Damage Description Used on Map	Full Description
I		Not felt. Marginal and long period effects of large earthquakes.
II		Felt by persons at rest, on upper floors, or favorably placed.
III		Felt indoors. Hanging objects swing. Vibration like passing of light trucks. Duration estimated. May not be recognized as an earthquake.
IV		Hanging objects swing. Vibration like passing of heavy trucks; or sensation of a jolt like a heavy ball striking the walls. Standing motor cars rock. Windows, dishes, doors rattle. Glasses clink. Crockery clashes. In the upper rang of IV wooden walls and frame creak.
V	Pictures move	Felt outdoors; direction estimated. Sleepers wakened. Liquids disturbed, some spilled. Small unstable objects displaced or upset. Doors swing, close, open. Shutters, pictures move. Pendulum clocks stop, start, change rate.
VI	Objects fall	Felt by all. Many frightened and run outdoors. Persons walk unsteadily. Windows, dishes, glassware broken. Knickknacks, books , etc., off shelves. Pictures off walls. Furniture moved or overturned. Weak plaster and Masonry D cracked. Small bells ring (church, school). Trees, bushes shaken (visibly, or heard to rustle).
VII	Nonstructural damage	Difficult to stand. Noticed by drivers of motor cars. Hanging objects quiver. furniture broken. Damage to masonry D, including cracks. Weak chimneys broken at roofline. Fall of plaster, loose bricks, stones, tiles.
VIII	Moderate damage	Steering of motor cars affected. Damage to masonry C; partial collapse. Some damage to masonry B; none to masonry. Fall of stucco and some masonry walls. Twisting, fall of chimneys, factory stacks, monuments, towers, elevated tanks. Frame houses moved on foundations if not bolted down; loose panel walls thrown out. Decayed piling broken off. Branches broken from trees. Changes in flow or temperature of springs and wells. Cracks in wet ground and on steep slopes.
IX	Heavy damage	General panic. Masonry D destroyed; masonry C heavily damaged, sometimes with complete collapse; masonry B seriously damaged. (General damage to foundations.) Frame structures, if not bolted, shifted off foundations. Frames racked. Serious damage to reservoirs. Underground pipes broken. Conspicuous cracks in ground. In alluvial areas sand and mud ejected, earthquake fountains, sand craters.
X	Extreme damage	Most masonry and frame structures destroyed with their foundations. Some well-built wooden structures and bridges destroyed. Serious damage to dams, dikes, embankments. Large landslides. Water thrown on banks of canals, rivers, lakes, etc.. Sand and mud shifted horizontally on beaches and flat land. Rails bent slightly.
XI		Rails bent greatly. Underground pipelines completely out of service.
XII		Damage nearly total. Large rock masses displaced. Lines of sight and level distorted. Objects thrown in the air.
	<i>Masonry A:</i>	Good workmanship, mortar, and design; reinforced, especially laterally, and bound together by using steel, concrete, etc.; designed to resist lateral force.
	<i>Masonry B:</i>	Good workmanship and mortar; reinforced, but not designed in detail to resist lateral forces.
	<i>Masonry C:</i>	Ordinary workmanship and mortar; no extreme weaknesses like failing to tie in at corners , but neither reinforced nor designed against horizontal forces.
	<i>Masonry D:</i>	Weak materials, such as adobe; poor mortar; low standards of workmanship; weak horizontally.

of a proposed development, but also the potential influences on surrounding slopes. In evaluating geologic risk, evidence of past landslides should be considered carefully, since areas of past slides will have a high likelihood for future landslide activity.

Ground Failure

Seismic activity can affect the stability of soil under various conditions. Landslides are the most obvious example of the type of failure. While landslides may be triggered by a number of causes, including earthquakes, weather and urban development, the potential for landslides is based on underlying geology. The energy of an earthquake may precipitate the occurrence of a landslide which may have otherwise not occurred until a later rainy season.

Liquefaction is another type of ground failure which may occur when loose, sandy and silty soils that have high water content are subjected to earthquakes. Under such conditions the solid soil particles enter into suspension and the soil becomes like quicksand and is unable to support structures. While saturated soils are most prone to liquefaction, this effect can also occur under conditions of lower moisture content. Soils prone to liquefaction, listed in decreasing susceptibility, are artificial fill, sand, and alluvium. Areas of artificial fill on top of reclaimed wetlands are highly susceptible to liquefaction in the event of an earthquake.

Lateral spreading is another type of earthquake-induced ground failure. Lateral spreading is caused by loss of structural strength in fine-grained cohesive materials such as clay. Soft, saturated clays like bay mud are susceptible to lateral spreading and may result in weakened foundations, rendering bridges unsafe and overpasses unusable.

Recent studies of the effects of the Loma Prieta earthquake show that earthquakes causing relatively high frequency (back and forth) motion of bedrock is transformed into lower frequency, but higher amplitude, motion within soils that overlie the bedrock. This is especially true in loosely consolidated alluvial soils and in marine sediments such as bay mud. For example, during the Loma Prieta earthquake, surface motion measured in the bedrock of Yerba Buena Island (in the Bay) was only 38 percent as strong as that measured on the surface of fill material, used to create Treasure Island, less than one mile away.

Buildings constructed on alluvium also demonstrate differential accelerations at different building heights. During the Loma Prieta earthquake, two-story office buildings in Oakland showed a maximum acceleration of 0.21 g (g is the acceleration of gravity or 32 feet per second) on the ground floor while the roof had an acceleration of 0.69 g. It is possible that buildings constructed on bay mud would have to resist amplification as high as seven times the 0.42 g bedrock acceleration expected during a maximum credible San Andreas earthquake (EIP, 1990, p. 3.2.1-12).

This risk is aggravated by the potential for slow differential settlement of buildings constructed on bay mud and imported fill. Such settlement makes buildings especially vulnerable to sudden damage from groundshaking during an earthquake. The shaking can also be accompanied by rapid differential settlement of bay mud that is not fully consolidated (EIP, 1990, p. 3.2.1-12).

Tsunami

Tsunamis are sea waves produced by large-scale seismic disturbances of the ocean floor. A tsunami (or as they are commonly called, a "tidal wave") with a 100-year recurrence level

This site includes portions of A.P. Nos. 157-470-07 and 09. This is the site of the proposed Renaissance Estates development. It is estimated to contain 10.64 million tons of material. It contains an abandoned quarry (abandoned in the 1980s). According to the Draft EIR for the proposed Renaissance Golf Links development, this material cannot currently be processed to meet State standards for aggregate. The Draft EIR found that the loss of this resource would not be a significant adverse impact (ESA, 1993, pp. IV-152 to IV-153).

B. Potential Impacts

Criteria Used to Determine Significance

The *CEQA Guidelines* indicate that a project will have a significant adverse impact if it will expose people or structures to major geologic hazards. Specifically, a significant effect would occur by:

1. Exposing additional people to an unacceptable risk from seismic activity which cannot be mitigated to a typically acceptable level by special design and construction techniques.
2. Exposing additional people to landslides or slope failure which cannot be mitigated to a typically acceptable level by special design and construction techniques.
3. Substantial changes in topography resulting from excavation, grading, and filling which could lead to adverse impacts (e.g., impacts on slope stability).
4. Overcovering or blocking access to productive mineral resources.
5. Affecting unique geologic or topographic features.
6. Generating substantial soil erosion.

Impact 4.1-A Population and employment activity increases under the proposed Draft Plan would increase the number of persons exposed to risk of injury and death and the amount of property damage resulting from seismic events in the area.

Since Novato is located in a seismically active area, future development will expose more people to surface fault rupture and ground shaking as well as geologic hazards caused by earthquakes including liquefaction, landslides, and flooding. There is potential for new development on lands underlain by bay mud and in other seismically hazardous areas shown on Figure 4.

A review of the major development sites shown on Figure 3 indicates that all or most of many of the sites would be subject to at least Moderate damage in a major earthquake. For example, all or portions of Sites 2, 5, 6-8, 20-23, 26, 29, 30, 33, 34, 36, and 38 are on lands subject to moderate to heavy damage during a major earthquake. Affected acreage on these major sites would be about 3,000 acres. As many as 1,600 new residences and

has an estimated run-up of 3.5 feet in the vicinity of Petaluma Point and in the Bel Marin Keys area (ESA, 1993, p. 5.161). Such a tsunami could cause or increase flooding in low-lying areas in the event of overtopping or failure of levees.

Seiches are rare oscillations of the water in an enclosed bay or lake which can be caused by earthquakes. On the basis of the lack of significant historic seiches within San Francisco Bay (including after the 1906 earthquake), the likelihood of a destructive seiche in Novato is extremely remote

Dam Failure

Stafford Dam has been determined to have an adequate safety margin to survive an earthquake of magnitude 8.25 (Richter scale) on the San Andreas Fault with an epicenter located within 10 miles of the dam site. The *Existing Conditions Report* includes a map (Figure 3.3) showing the area that would be inundated if the dam did fail due to a massive earthquake..

Mineral Resources

The *Existing Conditions Report* includes a complete description of potential mineral resources in the Novato area. Based on the mapping included in that analysis (Figure 6.1 of the *Existing Conditions Report*), properties located within the Novato Conglomerate - Black Point Mineral Resource Sector have development potential. The resource material on these sites consists of sand and gravel which is suitable for Portland Cement Concrete (PCC) grade aggregate. These sites have been designated as Mineral Resource Zone - 2 (MRZ-2) by the California Division of Mines and Geology. There is an historic quarry on the property where the Renaissance Golf Links project has been proposed; this quarry was abandoned in the 1980s.

The MRZ-2 designation denotes the areas where adequate information indicates that significant mineral deposits are present. The MRZ-2 designation is the most definitive of the MRZ designations. Those lands so designated represent the most valuable mineral resources identified by the State Geologist. The Surface Mining and Reclamation Act of 1975 (SMARA) directs local cities and counties to adopt policies to preserve and protect designated mineral resource sites from premature development or other land uses which are incompatible with mineral extraction. The State's purpose is to ensure that necessary mineral and construction materials are located reasonably close to their markets.

These two sites (actually part of the same deposit) are one of two areas in the North San Francisco Bay production-consumption region that are designated MRZ-2 for sand and gravel deposits. The Novato Conglomerate deposits are considered important due to their location as well as State projections that all PCC-grade aggregate resources in the North San Francisco Bay zone will be exhausted within 45 years (ESA, 1993, p. IV-140).

Novato Conglomerate- Black Point (Sector D)

This site includes portions of A.P. Nos. 143-151-01, 02, and 13. The site has development potential under the Draft General Plan. It contains materials suitable for Portland Concrete Cement. It is calculated to have 18.47 million tons of material (County of Marin, January 1994, p. EQ-15).

3,200,000 square feet of non-residential development could be constructed in areas subject to this hazard.

Most of these sites are underlain by bay muds. Sites west of Highway 101 designated for residential development such as one of the sites owned by the Novato Unified School District (Site 5) and a portion of the Brookside property (Site 2) are in areas subject to "moderate" damage.

Future residences and commercial/industrial structures will be subjected to strong groundshaking. There is a 22-28 percent chance of a major earthquake (magnitude 7.1) occurring in the next thirty years. People occupying improperly constructed buildings, or buildings constructed on unstable slopes or liquefiable soils will be particularly vulnerable. To minimize the risk from seismic activity, the Draft Plan contains a number of policies and programs outlined below. These policies and programs are aimed at reducing death, injuries, damage to property, and economic and social dislocation resulting from geologic hazards. While these policies and programs reduce the risk of damage from seismic activity, that risk cannot be eliminated. As was stated earlier, this is a risk assumed by all current and future residents and employees in Novato.

Seismic hazard is most severe on lands underlain by bay muds and steep hillsides subject to landsliding or slope failure. The Draft General Plan significantly reduces future risk by establishing the Bayfront Overlay Zone. This Zone includes virtually all land underlain by bay mud. Future development within this zone is restricted which means that fewer people and improvements will be placed at risk in this area. The Draft General Plan also contains specific policies and programs aimed at ensuring that new development on steep slopes or areas subject to slope failure is adequately engineered. While it may be possible to design "safe" buildings on properties underlain by bay mud or on slopes prone to failure, recent experience in the Loma Prieta earthquake, the 1994 southern California earthquake, and the Kobe earthquake in Japan show that buildings and other structures exhibited more damage than was expected. While state-of-the-art seismic engineering may result in buildings that are relatively safe, the risk from seismic events is substantially reduced by limiting development on sites with unstable subsoils.

Future development within the City will be required to address geologic hazards on a site specific basis prior to construction.

Mitigation Measures Proposed by the Draft General Plan

Existing standards and requirements in the City Code and policies and programs in the Draft General Plan reduce the overall risk from seismic events to a level that is less than significant.


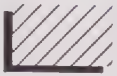
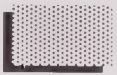
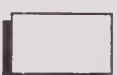
Proposed development must undergo CEQA review. This review includes identification of potential seismic-related hazards as well as mitigation measures necessary to ensure that people and property are not subjected to undue risk. In addition, the existing City Code provides engineering and site design standards by which geologic risk is to be appropriately mitigated. Building permits are not issued until a project is in conformance with Novato's Development Standards chapter in the City Code (Chapter V). The *City of Novato Emergency Plan* (1991) and City Ordinance 1261 ("An Ordinance Relating to Emergency Organization and Functions") provide the formula for disaster response in the event a major earthquake occurs.

FIGURE 4

EARTHQUAKE HAZARD

NORTH HAYWARD EARTHQUAKE
MAGNITUDE 7.1

Scale: 1" = 4000'

-  X - Damage Level Extreme
(Highway 101 is predicted to suffer extreme damage)
-  IX - Damage Level Heavy
-  VIII - Damage Level Moderate
-  Areas not shaded are of lesser hazard

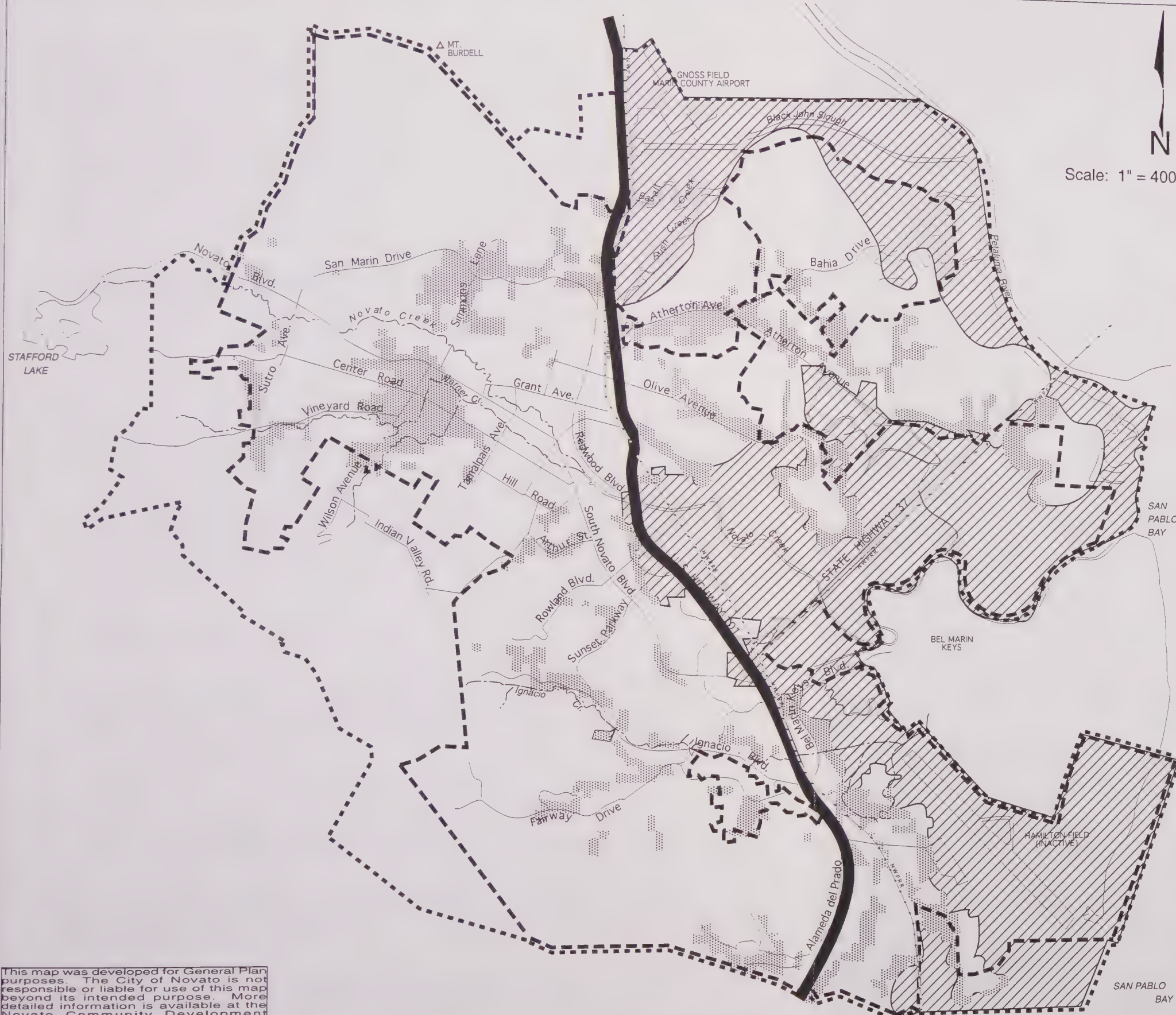
NOTE: This map is schematic and should not be used to determine hazard at any particular location. See the detailed maps on file with the Novato Community Development Department.

SOURCE: *On Shaky Ground - City Maps*
City of Novato (ABAG, 1995)

City of Novato General Plan Revision
Draft
Environmental Report

----- City Limit Line
..... Sphere Of Influence

Revised & Recirculated
November, 1995



This map was developed for General Plan purposes. The City of Novato is not responsible or liable for use of this map beyond its intended purpose. More detailed information is available at the Novato Community Development Department.

Limitations on development in areas with bay mud and landslide potential in combination with the geologic hazards evaluation will further reduce the risk from seismic events to an acceptable level. Draft General Plan objectives, policies, and implementation programs contained primarily within the Safety and Noise Chapter are sufficient to reduce the risk from seismic events to a level of insignificance. In some instances, additional site-specific geologic review is required to assess site-specific constraints and hazards and to identify site-specific mitigations. The Draft General Plan recognizes that it is not possible to eliminate exposure to seismic hazard. Policies and programs will substantially reduce the hazard identified for Major Development Sites. However, risk will remain, especially for sites located on bay muds. The Draft General Plan objectives and policies reduce that risk for new development to a level that is insignificant given the seismic hazard conditions of the locale.

The proposed new road connection between the Bel Marin Keys industrial area and Highway 37 is beneficial as regards seismic hazard since this new road would provide an additional evacuation route and emergency response route.

The following Draft General Plan policies and programs in the Safety and Noise Chapter mitigate this impact.

SF Objective 1 Reduce seismic hazards.

SF Policy 1 Seismic Hazards: Reduce the risk of loss of life, personal injury and damage to property resulting from seismic hazards.

SF Program 1.1: Continue to require geotechnical and engineering geology reports by consulting Certified Engineering Geologists and Registered Geotechnical Engineers for development proposals on sites in seismically and geologically hazardous areas and for all critical structures. These reports should include, but not be limited to: evaluation of and recommendations to mitigate the effects of ground shaking, landslides, surficial debris flows, expansive soils, subsidence and settlement, and fault displacement .

SF Program 1.2: Continue to require, as conditions of approval, measures to mitigate potential seismic hazards for structures.

SF Program 1.3: Continue to require professional inspection of foundation and excavation, earthwork and other geotechnical aspects of site development during construction on those sites specified in geologic and geotechnical studies as being prone to moderate levels of seismic hazard, in accordance with the current version of the Uniform Building Code.

SF Program 1.4: Continue to monitor and review existing critical, high priority buildings to ensure structural compliance with seismic safety standards.

SF Program 1.5: Provide information to the public on ways to reinforce buildings to reduce damage from earthquakes and what to do in the event of an earthquake.

SF Policy 2 Limit Building in Areas with Significant Risk Potential: Discourage construction of high density residential, other critical, high-occupancy or essential services buildings in high risk zones.

SF Program 2.1: Continue to require adherence to the Uniform Building Code for Risk Zone 4 in order to protect against seismic hazard.

SF Program 2.2: Establish setbacks from active or potentially active fault traces for structures intended for human occupancy.

Additional mitigating policies and programs are included in the Environment Chapter. This Chapter establishes a Bayfront Overlay Zone (EN Policy 11) and restricts development potential in that zone. This policy is reflected on the Land Use Designations Map in the Draft General Plan. Since most of the area underlain by bay muds is within this zone, restricting development potential here reduces the number of people and structures subject to seismic events. In addition, LU Policy 9 of the Land Use Chapter requires that a Constraints Analysis be prepared on properties within the historic bayline and on scenic lands (which include most hilly areas). This Constraints Analysis includes the requirement for the examination of geologic hazards to develop a project to avoid or adequately mitigate such hazards.

Additional Mitigation Measures Suggested

The policies and programs incorporated in the Draft General Plan will reduce the risk from seismic events to a level that must be accepted by people living in a seismically-active area. No additional mitigations are necessary. The impact is considered to be less than significant.

Impact 4.1-B Development would be allowed in areas subject to tsunami.

Areas adjacent to the edge of the Bay are susceptible to tsunami waves. If development occurred in such areas, there would be a risk to lives and property. This is a potentially significant impact. The existing City Code Chapter 5-31.008c requires improvements to be constructed above base flood elevation in Coastal High Hazard Areas as defined by FEMA maps. In addition, the Land Use Designations Map does not allow development in low-lying areas near the Bay.

Mitigation Measures Proposed by the Draft General Plan

The Draft General Plan Land Use Designations Map restricts development potential on low-lying properties along the Bay edge. In general, this reduces the chance for tsunami-caused damage to a level that is less than significant. In addition, the Safety and Noise Chapter contains the policies restricting development in areas subject to severe flooding (SF Policy 8).

Additional Mitigation Measures Suggested

No additional mitigation is required. The Draft General Plan effectively reduces this impact to a level that is less than significant.

Impact 4.1-C Seismic events could result in the failure of Stafford Dam which could cause injury or death and property damage.

All or portions of Major Development Sites 2, 3, 16, 19, and 20 are located within the dam's heaviest zone of inundation (3-5 foot depths). Failure of the dam would threaten lives and properties on these development sites (having the buildout potential for 265 new residential units) as well as infill sites and existing development within the zone of inundation.

Stafford Dam is capable of withstanding a maximum credible earthquake of 8.25 on the Richter Scale on the San Andreas Fault. Maximum predicted event for this fault is 8.3. The City's *Emergency Plan* includes provisions for warning and response in case of failure of this dam. Given that the dam has been constructed to withstand a seismic event nearly equal to the maximum credible event and the existing provisions for emergency response, allowing additional development within the inundation zone below the dam is not deemed a significant impact. As such, no mitigation measures are required.

For new reservoirs or storage tanks, the Draft General Plan includes policies that address the safety of those improvements.

Mitigation Measures Proposed by the Draft General Plan

The following policy and programs are from the Safety and Noise Chapter.

SF Policy 10 Reduce Hazards of Dam Failure: Ensure that the design and location of dams and levees are in accordance with all applicable design standards of the California Division of Dam Safety.

SF Program 10.1: Continue to enforce City Code Chapter V, regulating dams.

SF Program 10.2: Review new levees for seismic and hydrological safety.

SF Program 10.3: Request that the North Marin Water District keep dam inundation maps on file for review by property owners who are located in areas of possible inundation.

Additional Mitigation Measures Suggested

No additional mitigation is required. The Draft General Plan effectively reduces this impact to a level that is less than significant.

Impact 4.1-D Development has the potential of exposing additional people and structures to slope failure hazard.

As previously described, slope failure and landsliding can be caused by a number of factors. The Draft General Plan allows new development in areas reportedly subject to landsliding and slope failure. There is development potential on a number of hillsides and ridgelines which are subject to landsliding. For example, a review of the sites shown on Figure 3 indicates that at least portions of Sites 2, 9, 12-15, 18, and 40 have some unstable

slopes. These sites total about 340 acres and have development potential totaling 265 residences. In addition, there are likely many other infill lots that contain unstable slopes. This is a potentially significant impact. Non-residential development is generally limited to areas that do not have steep slopes.

The City Code currently requires a permit for extensive grading (see Chapter 5-23 and Chapter 6-7); this permit requires preparation of a grading plan which incorporates the analysis of a soils engineer. For subdivisions, the City Code also requires geotechnical evaluations for sites with potential geologic hazards (Chapter 9-15). CEQA requires that development projects be assessed for potential geologic hazards; where necessary, mitigations to ensure slope stability are required. To further minimize risk to people and improvements, the Draft General Plan calls for geotechnical assessments for all sites located within the mapped areas of high hazard for slope failure (slope stability maps are on file with the Novato Community Development Department; also, see Figure 2.1 in the *Existing Conditions Report*).

Mitigation Measures Proposed by the Draft General Plan

The Draft General Plan includes specific policies and programs aimed at ensuring the safety of people and improvements in areas with unstable slopes. These policies and programs will reduce the risk from landsliding and slope failure to an insignificant level. These policies and programs will be applied to each development proposal so that site-specific mitigations can be developed to ensure safety. The following policies and programs are included in the Safety and Noise Chapter.

SF Objective 2 Minimize the risk of personal injury and property damage resulting from slope and soil instability.

SF Policy 3 Slope and Soil Instability: Continue to enforce existing regulations and procedures to identify potential hazards relating to geologic and soils conditions.

SF Program 3.1: Require evaluation of slopes over 15 percent and/or unstable land, areas susceptible to liquefaction, settlement or containing expansive soils for safety hazards prior to issuance of any discretionary approvals and require appropriate mitigation measures.

SF Program 3.2: Require that development in areas identified by SF Map 2: Slope Instability be evaluated by a Certified Engineering Geologist.

SF Program 3.3: Require financial protection for public agencies and individuals as a condition of development approval where geological conditions indicate a potential for high maintenance costs.

SF Program 3.4: Require repair, stabilization, or avoidance of landslides, or areas of soil creep or possible debris flow as a condition of project approval.

The Environment Chapter contains several policies and programs aimed at limiting development on areas with steep slopes and requiring that slope constraints be addressed while designing a project. These policies and programs include:

EN Objective 7: Protect visual values on hillsides, ridgelines, and other scenic resources.

EN Map 3, Scenic Resources shows areas characterized by the significant ridgelines, hillsides, and other scenic elements that help to form the visual character of Novato and that define community separators. It is important that development be located and designed in such a way that these resources are protected.

EN Policy 27 Protect Scenic Resources. *Protect visual values on hillsides, ridgelines, and other scenic resources.*

EN Program 27.1: Consider establishing a hillside and ridgeline protection ordinance. This ordinance would include development standards and measures for hillsides and scenic ridgelines. A slope density regulation which decreases allowable development densities as slope increases would be a practical method to protect hillsides. Refer to the Safety and Noise Chapter for additional policies and programs dealing with development controls for unstable slopes.

The Land Use Chapter (LU Policy 9) also requires a Constraints Analysis for sites with unstable slopes.

Additional Mitigation Measures Suggested

The policies and programs included in the Draft General Plan will reduce the risk from unstable slopes to a level that is less than significant. No additional mitigation measures are required.

Impact 4.1-E Construction will increase erosion from soils. This erosion can cause sedimentation of Novato streams and other waterways.

Grading, excavating, and filling can all result in bared soils which, if not protected, can be eroded by rain and wind. These eroded sediments can be transported to intermittent and permanent streams and storm drain systems. The resulting sedimentation can reduce the flow carrying capacity of these waterways thereby aggravating flooding impacts. The sediments can also reduce the water quality of receiving waterways. These are all potentially significant impacts. These impacts can occur from development of any site in Novato.

Because San Francisco Bay is a "water-quality-impaired water body," the *Regional Water Quality Control Plan for the San Francisco Bay Region ("Basin Plan")* mandates that each Marin County municipality participate in a "Baseline Program" to prevent increased pollutant discharge from their storm drain systems. Novato is a participant in the Marin County Baseline Urban Runoff Control Program (BURCP). This BURCP is now called the Marin County Stormwater Pollution Prevention Program (MCSTOPPP).

The existing City Code includes requirements for erosion control in new development. These standards are listed in Chapter V (Development Standards), especially Chapter 5-23.007 to 5.23.009. This Chapter includes 1) restrictions on cut-and-fill slopes; 2) contour grading regulations; 3) slope stability requirements; 4) maximum level areas that can be graded; and 5) erosion control. For example, the faces of all cut and fill slopes "shall be

prepared and maintained to control erosion," (Chapter 5-23.008[7]). Existing City Code standards, the City's continuing involvement with MCSTOPPP, and Draft General Plan policies and programs reduce this impact to a level that is not significant.

Mitigation Measures Proposed by the Draft General Plan

The Environment Chapter contains numerous policies and programs aimed at reducing erosion. The major policies and programs are listed below.

EN Objective 1 Preserve, protect, and enhance streams and other bodies of water.

EN Policy 1 Ecology of Creeks and Streams. Preserve and enhance the ecology of creeks and streams.

EN Program 1.1: Establish a Watercourse Protection Overlay Zone for watercourses shown on EN Map 1. The width of the overlay zone will consist of the watercourse itself between the tops of the banks (existing height) and a strip of land extending 50 feet laterally outward from the top of each bank. Include provisions to extend the boundary of the Watercourse Protection Overlay Zone where critical habitat areas and riparian vegetation exist. Establish standards and require a permit for any excavation, filling, or grading; removal or planting of vegetation (except for removal of exotic, invasive plants); construction, alteration, or removal of any structure; or alteration of any embankment that is proposed in a Watercourse Protection Overlay Zone. Permits shall include mitigations to protect native vegetation and wildlife, and shall take into account aesthetic, scenic, environmental, and recreational impacts or benefits.

EN Policy 4 Erosion Control. Minimize soil disturbance and surface runoff in Watercourse Protection Zones. Grading work in and adjacent to the zones shall be conducted during the dry season only, at times when the Community Development Department determines that surface runoff will be minimal or containable.

EN Objective 10: Preserve, protect, and enhance water resources.

EN Policy 35 Watershed Management. Minimize the effects of pollution in stormwater runoff. Retain and restore where feasible the natural hydrological characteristics of watersheds in the Novato Planning Area.

EN Program 35.1: Continue to implement the Clean Stormwater Ordinance.

EN Policy 36 Prevent Point Source Pollution. Continue to prohibit discharges of any substances other than stormwater and prevent illicit dumping of wastes into storm drains and creeks.

EN Program 36.1: Investigate reports or evidence of illicit discharges or dumping into creeks or storm drains and work with the appropriate state and local agencies to determine causes and take measures to prevent such occurrences.

EN Policy 37 Use CEQA to Reduce Urban Runoff. Use the provisions of the California Environmental Quality Act (CEQA) process to identify measures to prevent erosion, sedimentation, and urban runoff pollution resulting from development.

EN Program 37.1: Include analysis and mitigation measures to reduce the harmful effects of runoff as part of project review.

This Environment Chapter also contains policies restricting development on hillsides and conserving native woodlands. These policies further reduce erosion. The Land Use Chapter contains LU Policy 9 which requires a Constraints Analysis for development applications on sensitive sites. This Constraints Analysis includes mitigations that reduce erosion and support water quality goals.

Additional Mitigation Measures Suggested

The policies and programs included in the Draft General Plan will reduce potential cumulative erosion impacts to a level that is less than significant. Each new development application must be reviewed per these policies and programs to ensure that site-specific impacts are adequately mitigated to a level of insignificance. To further ensure good water quality, the following program could be added to Environment Policy 1:

EN Program 1.2: All streams, including tributaries to streams shown on EN Map 1, shall be preserved as above-ground streams wherever feasible.

The following program could be added to Environment Policy 35

EN Program 35.2: All new development will be required to control site erosion so that it does not create sedimentation of streams. New development will be fiscally responsible for remedying substantial sedimentation caused by the project occurring downstream of the site. Determination of whether sedimentation is "substantial" shall be determined by the City of Novato and, if the Department agrees, the California Department of Fish and Game.

Impact 4.1-F Future development could remove properties of known mineral resources from future use.

Development of the two areas with known mineral reserves will remove an important mineral resource from future production. The Draft EIR for the proposed development on A.P. Nos. 157-470-07&09 (i.e. Development Site 21 on Figure 3) concludes that the loss of this mineral resource is not significant given the possibility that the aggregate could not currently be processed due to current, more stringent state standards for aggregates and the fact the City considers the mineral potential "of minor concern," (ESA, 1993, p. IV-152).

The California Division of Mines and Geology considers development that eliminates future use of a mineral resource that is designated as a MRZ-2 zone as a significant impact. When the mineral resource becomes unavailable, then other sources (that may be geographically distant) must be utilized. This generates secondary impacts involved in transporting the material which may generate significant impacts. Given State concerns about retaining available mineral deposits, loss of the identified sites would be a significant impact.

Mitigation Measures Proposed by the General Plan

The Environment Chapter addresses these known mineral deposits in the following policy.

EN Objective 12: Protect mineral resources.

EN Policy 40 Mineral Resources. Protect for productive use sites that have been designated by the State Division of Mines and Geology as mineral resource sites at Black Point and Burdell Mountain Open Space Preserve.

EN Program 40.1: Use the environmental review process to determine areas that are potential mineral resources, and attach conditions of approval to development projects to protect these areas for productive use.

Additional Mitigation Measures Suggested

This Draft General Plan policy and program ensures that significant mineral resources will be preserved and reduces the impact to a level that is less than significant. No additional mitigations are required.

Impact 4.1-G Construction of future projects would require extensive earthmoving and grading, resulting in permanent changes in topography.

Future grading actions can result in filling of lowlands and removing portions of hillsides or uplands. For example, development (as shown on Figure 3) on Major Development Sites 2, 6-9, 11-15, 17-19, 25, 27, 38, and 40 will require hillside grading to provide for streets and building area. These sites total about 1,300 acres with a buildout potential of about 1,550 new residential units and 1,700,000 square feet of non-residential development. Extensive grading for site development on these sites as well as all other development sites must comply with specific requirements set forth in the Development Standards chapter of the City Code (specifically Chapter 5-23). These standards are intended to retain and where possible enhance the physical characteristics of Novato's topography. The standards include restrictions on cut and fill operations.

Mitigation Measures Proposed by the Draft General Plan

Objectives, policies, and programs of the Draft General Plan restrict development in low-lying areas (i.e., wetlands) and on ridges which will reduce extensive changes of the City's topography.

As described under previous impacts, the Draft General Plan restricts development on hillsides. The Draft Plan also calls for the preparation of a Constraints Analysis to minimize visual effects. While cut and fill operations will be a part of many developments, the limitations required in the Draft General Plan minimize this effect. Given these restrictions and requirements, the cumulative effect on topography will be mitigated to a level that is less than significant. Each new development application must be reviewed for conformity with existing Development Standards and Draft General Plan policies and programs to ensure that site-specific impacts are mitigated to a level that is less than significant.

Additional Mitigation Measures Suggested

No additional mitigation measures are required. The cumulative impact is reduced to a level that is less than significant. Future projects must be assessed on a site-by-site basis, given existing City Code standards and policies and programs of the Draft General Plan, to assess localized impact and determine site-specific mitigation measures.

4.2 HYDROLOGY AND STORM DRAINAGE

This section has been reviewed for accuracy by the Novato City Engineer.

A. Setting

The climate and hydrologic character of the area within the Sphere of Influence of the Novato General Plan is strongly influenced by the Pacific Ocean. The climate is typical of climate throughout the San Francisco Bay Area; winters are mild and summers are moderately warm. Minimum and maximum daily temperatures vary from 15 to 30 degrees. July is the warmest month with a mean daily average maximum temperature of 80 degrees and January is the coldest month, with a mean daily minimum temperature of 54 degrees. The prevailing winds are usually from the west and southwest. Normal annual precipitation varies from a maximum of over 30 inches in the western and southern portion of the area to a minimum of about 22 inches in the northern and eastern portions, with a basin-wide mean of 28 inches. Over 90 percent of the annual precipitation occurs between November and April. Infrequent snowfall in the higher elevations has a negligible influence on flood runoff. Elevations in the area range from less than zero feet (NGVD) to approximately 1,900 feet (NGVD).

Major Waterways

The major waterways in the Planning Area include the Petaluma River, Novato Creek and its tributaries, Rush Creek, Stafford Lake and San Pablo Bay. The majority of the Planning Area is drained by Novato Creek. The northern portion of the Planning Area is drained by the Petaluma River. The major streams are shown on Figure 5.

Petaluma River

The Petaluma River, originating approximately 20 miles north of the city of Petaluma, forms the northeast boundary of the Novato Planning Area. Navigable from San Pablo Bay to Petaluma, petroleum and gravel products are transported from Petaluma to San Francisco via the river. Marshlands along the Petaluma River have been considered for nomination as a federal estuary sanctuary. This proposal was made by the Bay Conservation and Development Commission (BCDC) in 1981, but has not been pursued in recent years. Currently, the BCDC designates wetlands along the Petaluma River shoreline as Tidal Marsh, and as such encourages their preservation.

Novato Creek

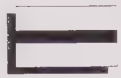
Novato Creek flows from west to east, essentially bisecting the Novato Planning Area and flowing directly through Novato. The watershed of Novato Creek encompasses the majority of the Planning Area, and its drainage basin encompasses 44 square miles. Numerous streams flow into Novato Creek including Warner Creek with a 5.1 square mile drainage, Arroyo Avichi with a 1.6 square mile drainage, and Arroyo San Jose with a 5.7 square mile drainage. In addition to these major waterways, numerous local drainage channels and storm drains discharge into Novato Creek and its tributaries.

Stafford Lake

Stafford Lake is a reservoir located on Novato Creek approximately 11 miles upstream from San Pablo Bay. The reservoir was established in 1951 and serves to both store water

FIGURE 5

WATERWAYS



Waterways



Watershed Boundary

NOTE: The Watercourse Protection Overlay zone applies to all streams shown on this map. It is defined as a zone extending 50 feet from the top of each bank.

City of Novato General Plan Revision
Draft
Environmental Report

--- City Limit Line
..... Sphere Of Influence

Revised & Recirculated
November, 1995

This map was developed for General Plan purposes. The City of Novato is not responsible or liable for use of this map beyond its intended purpose. More detailed information is available at the Novato Community Development Department.

for domestic use and to reduce flood impacts along Novato Creek. The reservoir has a storage capacity of 4,430 acre feet and a water surface area of 245 acres.

Flooding

Novato has been subject to periodic flooding, especially along Novato Creek. Figure 6 shows the location of the 100-year floodplain in Novato. Flood control along major water courses in Novato is the responsibility of the Marin County Flood Control and Water Conservation District. Due to frequent serious flooding in the Novato area, the District proposed a benefit assessment program in June of 1984 to finance construction of detention ponds and creek channel modifications. The purpose of these improvements was to prevent flooding during floods up to a 50-year recurrence interval (a 50-year flood is the magnitude of storm flow which has statistically a 2 percent chance to be equaled or exceeded annually). Voters approved the assessment in November 1984, with construction commencing in 1985 and now nearing completion. Floods which exceed the magnitude of a 50-year event will continue to cause flood damages to the City; however, these larger floods are expected to be infrequent, to be localized (inundating primarily streets and vacant lands), to cause disruptions to business and service activities, to delay transportation, etc. The potential damages and flooding hazard resulting from recurrence of a 100-year flood similar to that which occurred in January 1982 which caused over 20 million dollars in damages, according to a report prepared by the U.S. Army Corps of Engineers, have been significantly reduced by implementation of the 50-year program for flood control improvements by the County Flood Control District.

The Existing Conditions Report

This report (Chapter 17) summarizes major flood control improvements that have been constructed since 1985. Only one portion of the proposed improvements of Novato Creek and its main tributaries remain to be completed. The remaining improvement is the design and construction of an environmentally safe plan for the reach of the main stem of Novato Creek between Diablo Avenue and Grant Avenue (about 4,000 linear feet). Planning for this reach is nearing completion and will be followed by CEQA review before detailed designs and construction are instituted. Construction is not expected to begin for about 2 years.

The County Flood Control District performs all maintenance of existing flood control improvements except for the levee along Novato Creek adjacent to the wastewater reclamation ponds of the Novato Sanitary District which are maintained under a lease agreement by the Sanitary District and the levee adjacent to the Bel Marin Keys development which is maintained by the Bel Marin Keys Association. The City of Novato is responsible for all storm drainage within the city boundaries. The City participates in the Federal Flood Insurance Program which specifies the 100-year flood as the desirable standard for urban communities. Current City of Novato development standards established in 1977 stipulate the 25-year storm recurrence interval as the design standard for providing storm drainage improvements for drainage basins of less than four square miles. To comply with these standards, in July 1984, the City of Novato committed funds to develop a Local Storm Drainage Master Plan. The Master Plan computed the theoretical 25-year stormwater flows for existing drainage pipes equal to or greater than 18-inch in diameter and compared that to their capacities in order to establish the need for capital improvements, which were recommended in order of priority based on the nature and size of development subject to flooding.

In 1989, voters approved a bond measure (Measure "F") to provide funding for street and storm drainage improvements. Included in the \$16.8 million total issue in Measure "F" was \$4.2 million allocated for storm drainage improvements, as opposed to the \$5.6 million in needed projects as identified in the Local Storm Drainage Master Plan. With the addition of new projects, implementation of the Master Plan is currently estimated to cost \$6.1 million. Construction of the lower priority projects not covered by the bond funding will be deferred until future funding is available. Master Plan construction work commenced in 1991 and is ongoing commensurate with the Measure "F" funding available for these projects. To date 13 projects have been completed at a total cost of \$1.8 million. The City's 1995–2000 Capital Improvements Program (CIP) includes 3 more projects at a total cost of \$777,000. These expenditures along with funds being spent for drainage on street and transportation projects will complete work funded under Measure F. The CIP also includes improvements estimated to cost \$949,000, funded with the Storm Water Pollution Funds (from BURCP) for street and drainage improvements. The Hamilton Field area was not included in the Master Plan study, but has since been master planned in conjunction with the June, 1993 approval of the Hamilton Field Master Plan.

Groundwater

Groundwater in the Novato Valley occurs primarily in deposits of alluvium resting on bedrock of the Franciscan group. Around the margins of the valley, small supplies of groundwater are obtained from the Franciscan group. In the hills to the north of the mouth of the valley, the Novato conglomerate is tapped by some wells.

B. Potential Impacts and Mitigations

Criteria Used to Determine Significance

A project will have a significant impact if it:

1. Exposes people or critical public facilities to unnecessary risk of flooding.
2. Causes a substantial increase in runoff that reduces the flood carrying capacities within downstream storm drain facilities and receiving waterways.
3. Causes a decline in the water quality of local surface waters or groundwater such that beneficial uses are adversely affected or degraded.

Impact 4.2-A Development within flood zones will expose more people and property to flood hazards.

Figure 6 shows the 100-year floodplain as mapped by the Federal government (the Federal Emergency Management Agency, FEMA). There are numerous vacant parcels with development potential within the 100-year floodplain. Construction of residences or businesses within this floodplain will expose people and property to flooding. For example, a comparison of the sites shown on Figure 3 with the floodplain illustrated on Figure 6 indicates that all or portions of Sites 3, 16, 20-23, 29, 33, 34, and 36 are within the 100-year floodplain. These sites total over 1,700 acres with development potential for about 300 new residences and 1,000,000 square feet of non-residential development.

FIGURE 6

100-YEAR FLOODPLAIN



100-YEAR FLOODPLAIN

The term "100-year flood" means there is a one percent chance of occurrence in any given year from July 1 to June 30.

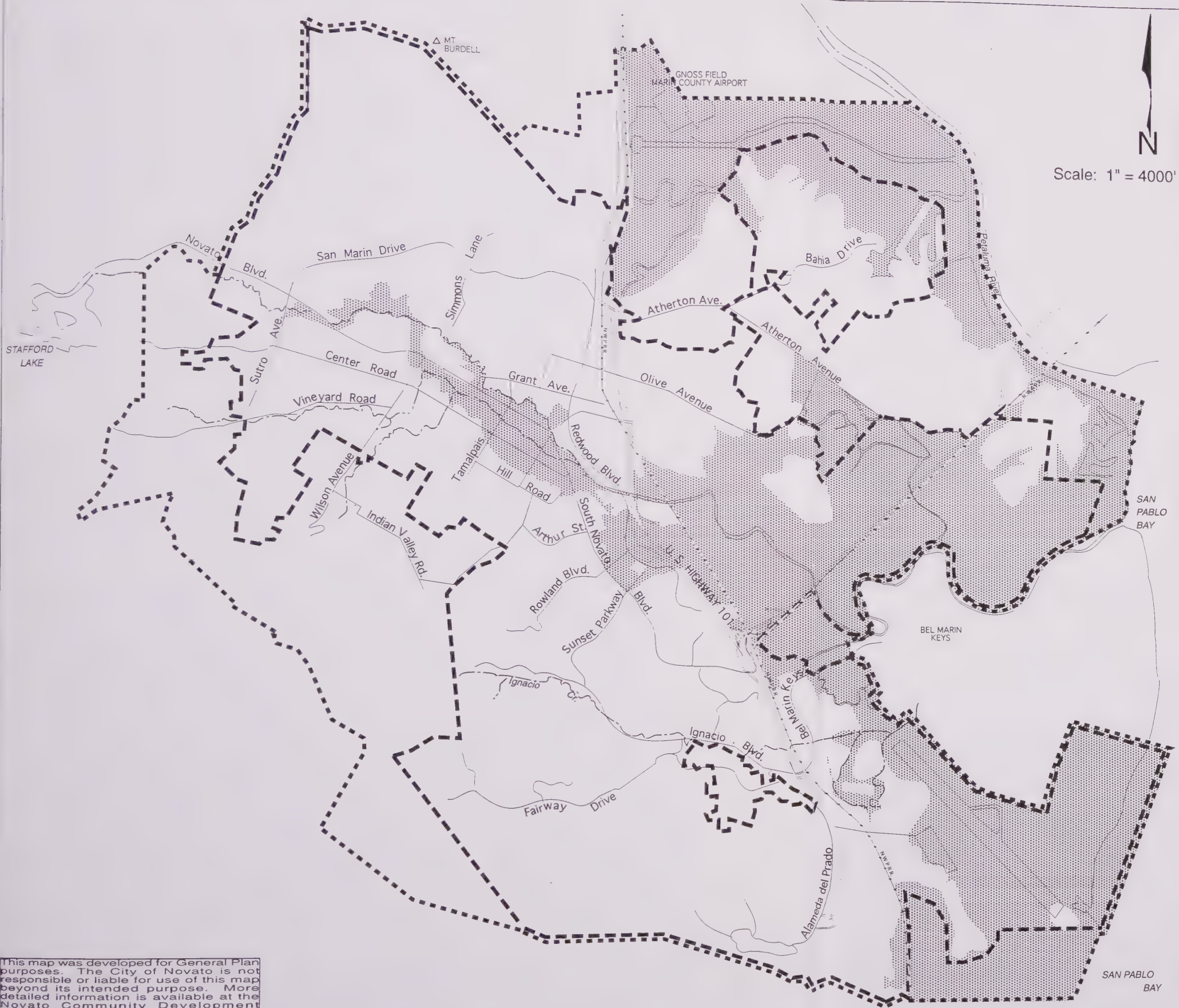
NOTE: The information presented in this map is schematic only. More detailed maps with this information are on file at the Community Development Department

SOURCE: Federal Insurance Rate Map, City of Novato, California (FEMA, 1989)

City of Novato General Plan Revision
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Revised & Recirculated
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Development of these sites as well as other smaller sites within the floodplain constitutes a potentially significant impact.

Implementation of policies and programs in the Safety and Noise Chapter of the Draft General Plan and continued enforcement of the Flood Damage Prevention Requirements (Chapter 5-31 of the City Code) which includes participation in the Federal Flood Insurance Program will ensure that future development within the floodplain will not result in significant risk to people or property. Chapter 5-31 contains 18 pages of regulations and is too long to include here. Basically, the Chapter requires that floors of residences be constructed above the 100-year flood elevation and that non-residential development either be similarly constructed or otherwise floodproofed. This Chapter contains the detailed requirements for construction within flood zones. The City Code also establishes floodplain zoning districts and regulates development within those districts. Three separate zones are established (named F-1, F-2, and F-3) where there is known potential for flood hazard. The F-1 zone is comprised of all lands within a primary floodway, that is, the channel of a watercourse and that portion of the adjoining flood plain which is reasonably required to provide for the passage of flood waters. No buildings, structures (except boat docks), and other impediments to flood flow are permissible in zone F-1. Lands within the F-1 zone are dedicated to and owned by the Marin County Flood Control and Water Conservation District.

The F-2 zone encompasses all lands within the natural floodway between the primary F-1 floodway zone and the outer limits of the natural floodway where inundation may occur but where depths and velocities are generally low. No building or structures may be constructed, and no leveeing, diking, filling of other activity which would reduce the ponding area or capacity of any parcel within the F-2 zone are permissible unless it is in a specified, designated encroachment area for which adequate hydraulic studies have been completed and a City ordinance enacted to assure that such encroachment does not increase flood heights and flood damages. Permitted activities within any such encroachment area are specified in an agreement between the landowner and the City of Novato, the Marin County Flood Control and Water Conservation District, or other appropriate public agency.

The F-3 zone is comprised of most of the remaining land within the 100-year floodplain (the 100-year flood has a statistical one percent annual recurrence rate). The extent of the F-3 zone (100-year floodplain) is defined by mapping done by the City of Novato, as shown on zoning maps. No buildings, fences, structures of any kind, levees, dikes, filling activities are permissible which would increase the depth or velocity of flood on the subject property or on adjacent lands within the F-3 zone without appropriate mitigation.

While the City Code and Draft General Plan ensure that structures will be constructed above the 100-year flood elevation, and the City's Multi Hazard Emergency Plan contains provisions to assist with flood fighting, there still will, or may be, flooding of streets and undeveloped areas. Such flooding can result in residents or employees being temporarily stranded, possible loss of power and other services, disruption of business and the need for rescue or emergency response. Restriction of development within the floodplain reduces risk to residents and employees, reduces damage to streets, utilities, and improvements, and reduces the need for emergency response. The Draft General Plan restricts new development east of Highway 101 in the 100-year floodplain. However, there is development potential along Novato Creek west of Highway 101 within the floodplain.

Flood control improvements for Novato Creek, Warner Creek, and Arroyo Avichi are aimed at maintaining flows from a 50-year flood event within the stream channel.

However, controlling the 100-year flood has been determined not to be feasible. As such, existing residents and businesses within the floodplain can expect flooding during a 100-year flood. New development within the 100-year floodplain will not result in flooding of structures, but future residents may experience inconvenience and minor property damage. Given the fact that the Draft General Plan generally restricts development in the floodplain and that any residences or structures which are constructed in the floodplain will be floodproofed, this impact is considered less than significant given policies and programs recommended in the new General Plan.

The existing flood control levees along the lower reaches of Novato Creek require periodic maintenance to correct recurrent subsidence problems. Maintenance work on the levee requires a permit from the U.S. Army Corps of Engineers (under provisions of the 1972 Clean Water Act, as amended) as it impacts wetlands. Currently, it is difficult to attain the Corps' permit pending resolution of the national debate on definitions of historic wetlands. There also may be an impact on the Salt Marsh Harvest Mouse or the Clapper Rail (two species whose habitat is protected by the Federal Rare and Endangered Species Act).

Mitigation Measures Proposed by the Draft General Plan

The Safety and Noise Chapter contains the following policies and programs:

SF Objective 3 Reduce flood hazards.

SF Policy 4 Encourage Enhanced Floodwater Storage: Support measures to manage, protect and increase the floodwater storage capacity where appropriate.

SF Policy 5 Use Updated Flood Rate Insurance Maps: Use the Federal Emergency Management Agency's Flood Insurance Rate Maps [FIRM] to reduce risk of flooding; identify 100 Year Flood Events; and calculate flow rates within identified stream channels.

SF Program 5.1: Use current Flood Insurance Rate Maps in the review of development proposals.

SF Program 5.2: Continue to enforce the City's Flood Damage Prevention Ordinance.

SF Program 5.3: Continue to participate in the National Flood Insurance program.

This program involves continuing to implement the regulations of City Code Chapters 5-31: Floodplain Insurance Requirements and Chapter 19-11.056(f): Combining Floodways Regulations.

SF Policy 6 Cooperate with Marin County: Continue to work with the Marin County Public Works Department to minimize negative impacts of storm drain runoff outside the City limits.

SF Program 6.1: Request that the County refer all development proposals located outside the City limits of Novato but within the Sphere of Influence to the City of Novato to ensure that additional storm drainage runoff resulting from development occurring in unincorporated areas upstream from drainage channels in the Novato Planning Area is adequately mitigated through improvements on site and downstream.

SF Policy 7 Pursue Available Funding Sources: Continue to cooperate with the Marin County Flood Control and Water Conservation District and other Marin jurisdictions in pursuing all available sources of funding to finance improvements to storm drainage facilities.

SF Policy 8 Reduce Flood Hazards: Reduce flood risk by maintaining effective flood drainage systems and regulating construction.

SF Program 8.1: Condition new development to maintain post development peak runoff rate and average volume similar to the predevelopment condition, to the maximum extent practicable.

SF Program 8.2: Require runoff rate/volume analysis of projects where deemed necessary by City staff.

SF Program 8.3: Require all development in the 100 year flood zone to comply with the Floodplain Zoning requirements in the Novato Municipal Code.

SF Program 8.4: Require as part of CEQA review development to cover the costs of drainage facilities needed for surface runoff generated as a result of new development.

SF Program 8.5: Require analysis of the cumulative effects of development upon runoff, discharge into natural watercourses, and increased volumes and velocities in watercourses and their impacts on downstream properties. Include clear and comprehensive mitigation measures as part of project approvals with financial and other measures to ensure their implementation.

SF Program 8.6: Request that the North Marin Water District maintain a file of inundation maps and drainage plans for existing and new water storage tanks in the City.

Additional Mitigation Measures Suggested

The policies and programs described above, in combination with already-adopted flood control standards, will adequately mitigate this impact to a level that is less than significant. Despite the fact that a number of Major Development Sites includes area within the 100-year floodplain, Draft General Plan policies as well as existing flood ordinances will ensure that development on these sites will not place people or property at risk. New development will not be allowed in areas subject to severe flooding without appropriate mitigation. No additional mitigations are required.

However, to further reduce this impact the City and/or Flood Control District should consider the following measures. These measures are recommended but not required to mitigate the impact.

1. Continue periodic inspections and performance of required maintenance to assure the continued effectiveness of all flood control and storm drainage facilities.
2. Develop a program to encourage the floodproofing of existing structures within the 100-year flood plan.

3. Annually publicize the extent of the 100-year floodplain and the nature of potential flood damages.
4. Utilize the services of the California Governor's Office of Emergency Services, wherever possible, to receive assistance and/or information regarding floods, flood protection and flood recovery.
5. Continue to upgrade and enhance emergency services and equipment to assist in flood reduction activities (e.g. pumping) and/or personnel evacuations.
6. Periodically re-evaluate the hydrology and flow rate calculations to assess additional or improved climatological data, effectiveness of existing flood control and storm drainage facilities, and the need for further improvements.
7. Update the City's Storm Drain Master Plan to include the provision of small detention basins or small storm water storage areas for future peak flows from each of the small hydrologic sub-basins within the City boundaries. In consideration of the cumulative impact of potential future development, new development should share the cost of these basins.
8. Periodically update the City's Storm Drain Master Plan and the flood control plans of the Marin County Flood Control and Waste Conservation District to reflect new and/or changed conditions.

Impact 4.2-B Future development will increase the area covered with impermeable surfaces which will increase the amount of runoff. This runoff can result in increased flooding in the City storm drain system and/or along receiving waterways.

New development of any site in Novato will increase the area covered with impervious surfaces which, in turn, will result in increased runoff. Increased runoff can result in additional flooding within Novato. This is a potentially significant impact. To ensure that future development does not increase runoff which might adversely affect other properties in the City, it will be necessary to improve the storm drain system so that it can adequately transport future peak flows. Chapter 5-15 of the City Code requires that new development include adequate storm drainage so that it does not affect downstream properties. The Public Facilities and Services Chapter of the Draft General Plan requires the development of a storm drain facilities master plan. Necessary improvements for individual properties will be determined at the time development applications are reviewed by the City, consistent with the City's Development Standards (e.g., Chapter 5-15 of the City Code).

In addition, the Draft General Plan restricts development potential within the 100-year floodplain, in wetland areas, and along major streams. These land use restrictions ensure that the natural drainage system is not impeded anymore than is currently the case.

Finally, the Draft General Plan maintains restrictions on development in areas used for the passage of floodwaters and for flood storage (zones F-1 and F-2). Existing standards plus Draft General Plan policies and programs reduce the cumulative impact to a level that is less than significant. Each development application must be reviewed per these standards,

policies, and programs to ensure that site-specific or local impacts are reduced to an insignificant level.

Mitigation Measures Proposed by the Draft General Plan

The Safety and Noise Chapter contains the following policies and programs:

SF Objective 3 Reduce flood hazards.

SF Policy 4 Encourage Enhanced Floodwater Storage: Support measures to manage, protect and increase the floodwater storage capacity where appropriate.

SF Policy 8 Reduce Flood Hazards: Reduce flood risk by maintaining effective flood drainage systems and regulating construction.

SF Program 8.1: Condition new development to maintain post development peak runoff rate and average volume similar to the predevelopment condition, to the maximum extent practicable.

SF Program 8.2: Require runoff rate/volume analysis of projects where deemed necessary by City staff.

SF Program 8.3: Require all development in the 100 year flood zone to comply with the Floodplain Zoning requirements in the Novato Municipal Code.

SF Program 8.4: Require as part of CEQA review development to cover the costs of drainage facilities needed for surface runoff generated as a result of new development.

SF Program 8.5: Require analysis of the cumulative effects of development upon runoff, discharge into natural watercourses, and increased volumes and velocities in watercourses and their impacts on downstream properties. Include clear and comprehensive mitigation measures as part of project approvals with financial and other measures to ensure their implementation.

SF Policy 9 Storm Drainage System: Maintain unobstructed water flow in the storm drainage system.

SF Program 9.1: Enforce measures to minimize soil erosion and volume and velocity of surface runoff both during and after construction through implementation of the Grading Ordinance.

SF Program 9.2: Continue to carry out annual inspection of the drainage systems.

SF Program 9.3: Require, where necessary, construction of siltation/detention ponds to be incorporated into the design of development projects.

SF Program 9.4: Periodically assess the need to establish improvement districts and other financing mechanisms to fund necessary storm drainage and watercourse improvements to minimize flood hazards.

The Public Facilities and Services Chapter of the Draft Plan includes a program to establish a drainage master plan. It states:

PF Program 1.5: Adopt a Novato Storm Drain Facilities Master Plan to use as a basis for planning and constructing improvements and for establishing fees.

Policy PF 1 of this Public Facilities and Services Chapter requires that new development be coordinated with the necessary public facilities, including storm drainage.

Additional Mitigation Measures Suggested

The policies and programs described above, in combination with already-adopted flood control standards, will adequately mitigate this impact to a level that is less than significant. The measures recommended under Impact 4.2-A will further reduce this impact.

Impact 4.2-C **Increased runoff into Novato streams will aggravate existing problems of creekbank slumping. Continued loss of creekbank can threaten lives and structures located along the streams. The sedimentation from this slumping could cause additional flooding and adversely affects the aquatic habitat along these streams.**

There is no existing mapping of areas with bank instability in Novato. However, observations of creekbanks on several streams in Novato indicate that there are numerous locations of creekbank slumping. A review of Figure 3 shows that a number of Major Development Sites border watercourses. For example, Sites 3, 5, 16, 22, 29, 33, 35, and 36 border streams shown on Figure 5. Additional runoff from new development on these sites as well as all sites contributing runoff to these streams could aggravate this situation of creekbank slumping. This impact is potentially significant. The Draft General Plan includes a policy that prohibits new development within 50 feet of the top of the bank of major watercourses. The Draft General Plan also contains policies that minimize peak flows to receiving watercourses.

Mitigation Measures Proposed by the Draft General Plan

The Environment Chapter contains specific policies to ensure that areas near streams are not developed and are protected. These include:

EN Objective 1. *Preserve, protect, and enhance streams and other bodies of water.*

EN Policy 1 Ecology of Creeks and Streams. *Preserve and enhance the ecology of creeks and streams.*

EN Program 1.1: Establish a Watercourse Protection Overlay Zone for watercourses shown on EN Map 1. The width of the overlay zone will consist of the watercourse itself between the tops of the banks (existing height) and a strip of land extending 50 feet laterally outward from the top of each bank. Include provisions to extend the boundary of the Watercourse Protection Overlay Zone where critical habitat areas and riparian vegetation exist. Establish standards and require a permit for any excavation,

filling, or grading; removal or planting of vegetation (except for removal of exotic, invasive plants); construction, alteration, or removal of any structure; or alteration of any embankment that is proposed in a Watercourse Protection Overlay Zone. Permits shall include mitigations to protect native vegetation and wildlife, and shall take into account aesthetic, scenic, environmental, and recreational impacts or benefits.

Under this program, the City will permit uses in the Watercourse Protection Overlay Zone that are allowed in the underlying zoning district on parcels that fall entirely within the zone. On parcels partially within the zone, uses will be permitted within the overlay zone where it can be conclusively demonstrated that development on any other part of the parcel would have a more adverse effect on water quality. In addition, the City will permit the following uses provided that conditions are included to protect and preserve the natural resource qualities of the watercourse area:

- a) Water supply projects
- b) Flood control projects
- c) Maintenance of water channels for erosion control and other purposes

The waterways shown on EN Map 1 constitute important physical, habitat, aesthetic, and recreational assets to the residents of Novato. The Watercourse Protection Overlay Zone will implement the goals and policies of the General Plan related to reducing flood risk and damage, and to protecting and preserving natural resources. It will also reduce flood losses; minimize indirect costs to government caused by development in flood hazard areas; preserve biological diversity and habitat; prevent erosion of stream banks; prevent siltation of stream waters; and generally conserve and protect woodland and wildlife resources in the Novato Planning Area. Marin County's Streamside Conservation Areas provide similar protections for watercourses.

EN Policy 2 Protect Native Vegetation. Protect native vegetation in watercourse areas.

EN Program 2.1: Require mitigation for loss of riparian vegetation. On-site mitigation is preferred wherever possible.

EN Program 2.2: Discourage planting of exotic vegetation in the Novato area.

EN Program 2.3 Develop educational programs to inform property owners about protecting native vegetation in watercourse areas.

EN Policy 3 Wildlife Habitat. Endeavor to maintain and enhance wildlife habitat areas in watercourse areas and restrict human use of these areas as necessary to protect them.

EN Program 3.1: Refer to the State Department of Fish and Game and Marin County Flood Control District any grading, filling, or construction proposal that would alter a watercourse shown on EN Map 1.

EN Policy 4 Erosion Control. Minimize soil disturbance and surface runoff in Watercourse Protection Overlay Zones. Grading work in and adjacent to the zones shall be conducted during the dry season only, at times when the Community Development Department determines that surface runoff will be minimal or containable.

(See EN Programs 1.1 and 1.2)

EN Policy 5 Habitat Restoration. Encourage restoration of damaged portions of riparian areas to their natural state, wherever feasible.

EN Program 5.1: Continue to participate in the Petaluma River project to restore marshland habitat and provide public access as long as it does not adversely affect wildlife habitat..

EN Program 5.2: Prohibit further degradation and require restoration of previously-degraded riparian areas as a condition of development when restoration is feasible, taking into account the project's size and cumulative impacts.

EN Program 5.3: Encourage riparian restoration as part of permit approval.

EN Policy 6 Public Access. Carefully manage access to watercourses shown on EN Map I in a manner that will not degrade the habitat.

EN Program 6.1: Develop guidelines for public access to watercourse areas. Include guidelines dealing with appearance and view preservation.

EN Program 6.2: Evaluate proposals for trails and waterway access relative to potential impact on habitat value. Consequences such as wetland impacts, removal or damage to trees or other habitats, or invasion by domestic animals should be avoided. Where avoidance is not possible, alternative access should be sought.

In most cases, point access rather than linear access will minimize adverse impacts. Use of vegetated buffer areas, rather than fences, to separate watercourses from paths will be considered. Bridges, increased access points and additional paths will be considered in watercourse corridors.

EN Policy 7 Water Quality. Encourage protection of water resources from pollution and sedimentation, and preserve their environmental and recreation values.

EN Program 7.1: Develop practices to protect water quality and natural ecosystems in Watercourse Protection Overlay Zones.

EN Policy 8 Environmentally Sound Flood Control Measures. Encourage flood control measures that retain the natural features and conditions of watercourses to the maximum feasible extent. (Also see sections on flooding in Safety and Noise Chapter.)

EN Program 8.1: Ensure the retention of flood protection easements held by the Marin County Flood Control and Water Conservation District on private property to prevent development in these areas.

EN Program 8.2: Encourage the Marin County Flood Control and Water Conservation District to manage floodplains in accordance with policies of the Novato General Plan.

The Land Use Chapter requires a Constraints Analysis (see Policy 9) for new development near streams or on other sensitive properties. This Constraints Analysis requires mitigation

of impacts to sensitive resources. Finally, the Environment Chapter includes specific policies aimed at protecting water resources. These include:

EN Objective 10: Preserve, protect, and enhance water resources.

EN Policy 35 Watershed Management. Minimize the effects of pollution in stormwater runoff. Retain and restore where feasible the natural hydrological characteristics of watersheds in the Novato Planning Area.

EN Program 35.1: Continue to implement the Clean Stormwater Ordinance.

EN Policy 36 Prevent Point Source Pollution. Continue to prohibit discharges of any substances other than stormwater and prevent illicit dumping of wastes into storm drains and creeks.

EN Program 36.1: Investigate reports or evidence of illicit discharges or dumping into creeks or storm drains and work with the appropriate state and local agencies to determine causes and take measures to prevent such occurrences.

EN Policy 37 Use CEQA to Reduce Urban Runoff. Use the provisions of the California Environmental Quality Act (CEQA) process to identify measures to prevent erosion, sedimentation, and urban runoff pollution resulting from development.

EN Program 37.1: Include analysis and mitigation measures to reduce the harmful effects of runoff as part of project review.

Additional Mitigation Measures Suggested

These extensive policies and programs of the Draft General Plan will reduce cumulative erosion impacts to a level that is less than significant. No additional mitigation measures are required. Individual projects must be reviewed on a site-by-site basis.

To further ensure that site-specific effects are adequately mitigated, the City should also consider the measures listed below. These measures are recommended but not required to mitigate the impact.

1. Develop a policy to reduce the potential for erosion and its resultant sedimentation into watercourses which assures that developers undertake specific effective measures to preclude soil erosion from construction activities reaching storm drainage facilities and/or major watercourses.
2. Undertake a program to identify and map specific areas along main watercourses where streambank erosion or slumping is an existing potential significant probability and implement necessary mitigation measures where necessary.

Impact 4.2-D **Increased runoff from impermeable surfaces will increase the transport of oils, greases, and other non-natural residues to receiving waterways.**

The increase in runoff as well as the increased use of automobiles, landscaping chemicals, and other chemicals associated with typical residential and commercial development will increase pollution of local watercourses. This is a potentially significant impact.

Because San Francisco Bay is a "water-quality-impaired water body," the *Regional Water Quality Control Plan for the San Francisco Bay Region ("Basin Plan")* mandates that each Marin County municipality participate in a "Baseline Program" to prevent increased pollutant discharge from their storm drain systems. Novato is a participant in the Marin County Stormwater Pollution Prevention Program (MCSTOPPP). This Stormwater Pollution Prevention Program (STOPP) includes provisions and recommendations for minimizing the amount of erosion from new construction, since eroded soil would be discharged by storm drain systems.

The STOPP includes sample General Plan policies to be included when a municipality updates its General Plan. These policies and programs are incorporated into the Draft General Plan. They provide the general framework for reducing water pollution and ensuring Novato's compliance with the STOPP. In many cases, specific mitigations must be developed on a site-by-site basis at the time when specific projects are reviewed. These policies and programs and continuing City participation in the STOPP will ensure that stormwater generated within Novato will not significantly affect receiving streams nor San Francisco Bay. In addition, the Draft General Plan contains policies and programs that ensure sensitive development on steep slopes, protect streamside areas, and limit development in wetland areas. These policies and programs reduce the potential for water pollution as well as provide necessary buffer areas between pollution sources and receiving waterways. The cumulative impact is considered less than significant given Draft General Plan policies and programs. As noted previously, specific mitigations must be developed on a site-by-site basis.

Mitigation Measures Proposed by the Draft General Plan

The Environment Chapter contains Policies 4-7 and 35-37 listed above under Impact 4.2-C which incorporate protections for water quality.

Additional Mitigation Measures Suggested

These policies and programs which include continuing participation with the STOPP ensure that cumulative water quality impacts will be reduced to a level that is less than significant. No additional mitigations are required.

Impact 4.2-F There is the potential for more people and property to be exposed to flood hazards from the ocean due to the predicted rise in the sea level.

Development may slightly increase exposure to flood hazards from ocean waves and due to the rise in sea level predicted for the future. Major Development Sites that might be subject to a sea level rise include at least portions of Sites 7, 21, 22, 29, 33, and 34. The Draft General Plan establishes a Bayfront Overlay Zone which prohibits development in areas subject to tidal action. The Land Use Designations Map shows virtually no development potential in low-lying areas near the Bay. This is not considered a significant impact.

Mitigation Measures Proposed by the Draft General Plan

The Safety and Noise Chapter contains the following:

SF Policy 11 Rising Sea Level: Consider the potential for sea level rise when processing development applications that might be affected by such a rise.

SF Program 11.1: Work with the County Flood Control and Water Conservation District to prepare a plan for responding to a potential rise in sea level. Consider developing flood control projects and modifying the City's land use regulations for areas subject to increased flooding from sea level rise.

Additional Mitigation Measures Suggested

This is an insignificant impact, and no additional mitigations are required.

4.3 VEGETATION AND WILDLIFE

A. Setting

The Novato Planning Area lies within the Central Coast region of the California Floristic Province. The biogeography (distribution of biotic communities) of the Novato Planning Area varies with localized climatic conditions. Local climate is defined by site-specific parameters such as slope, exposure, air and water flow, tidal action, and other factors which influence growing conditions and habitat utilization. Geographic features in the Novato Planning Area which influence local climate include the bay shoreline, mountainous terrain, and the Novato Creek and Petaluma River drainage basins. The following discussion of biotic communities is taken from the *Existing Conditions Report* prepared for the City.

Biotic Communities

A biotic "community" may be defined as an association of plants and animals in a given area or region in which the various species are more or less interdependent upon each other. "Community" is a functional term which recognizes interactions between plants and animals, such as competition, food supply, predation, etc. In the following discussion, biotic communities are identified according to the dominant vegetation type. The term "habitat" is used to define the spatial and temporal environment in which an organism fulfills its needs for survival (i.e. food/nutrients, shelter, breeding, and resting), and may include more than one biotic community. Biotic communities in the Novato Planning Area have been generalized into the following categories:

- Saltwater and Brackish-Water Marshland
- Freshwater Wetland
- Diked Baylands
- Riparian
- Oak/Hardwood Woodland
- Grassland/Oak Savanna
- Agricultural/fallow
- Urban/landscaped

Generally, grassland/oak savanna occurs in drier upland areas, interspersed with oak/hardwood woodland which occurs on north-facing slopes and in mesic canyons and ravines. Riparian communities occur along the upper portions of Novato Creek and its tributaries. Saltwater and brackish water marshland communities are found along the lower reaches of Novato Creek, Petaluma River, and Gallinas Creek, where fresh streamwater mixes with Bay saltwater. Freshwater wetlands are formed by the permanent or seasonal inundation of low-lying areas by fresh streamwater or stormwater runoff. Valley areas and bayside plains which have been leveed are used for grazing and agricultural production. Urban/landscaped areas are concentrated in the Novato Valley.

Basic vegetation communities are shown on Figure 7.

Saltwater and Brackish Water-Marshland

The marshes and much of the freshwater wetlands habitat are part of the San Francisco Bay Estuary. An estuary is a region where salt and freshwater mix. The wetlands provide many benefits to the Estuary's fish, wildlife, and human populations.

Saltwater marsh communities occur in the upper intertidal zone of protected shallow bays, estuaries, and coastal lagoons. Tidal action creates a vertical zonation of environmental conditions which vary in frequency and depth of inundation. This environmental gradient is reflected in the zonation of saltwater marsh vegetation. Typical saltwater marshes of the San Francisco Bay Area include cordgrass (*Spartina foliosa*) at the lowest elevation (closest to the water), pickleweed (*Salicornia virginica*) in the middle zones, and salt grass (*Distichlis spicata*) in the higher zones. An increasing abundance of other plant species occur toward the upper edges of the salt marshes, as the marshes intergrade with grassland, brackish marsh, or coastal scrub communities.

Brackish-water marshes occur at the mouth of large streams which enter northern San Pablo Bay, creating a gradual transition zone between salt marsh and riparian vegetation communities. On steeper slopes, brackish-water marsh vegetation is dominated by tules (*Scirpus acutus*) at lower elevations, cattails (*Typha* sp.) in the middle zones, and bulrushes (*Scirpus olneyi* and *S. robustus*) in the higher zones. The plant composition is similar but more homogenous on gentler slopes. Brackish-water marshes are uncommon along smaller streams entering the bay, which instead exhibit a relatively sharp transition from saltwater marsh to riparian vegetation types.

Marshlands are very productive ecosystems which provide food, cover, nesting and roosting habitat for a variety of wildlife, generate organic matter to fuel aquatic food chains, and function as natural flood control and pollution filtration systems. The high rate of primary productivity in the marsh, which exceeds the rate of consumption, contributes the needed food, energy and nutrient subsidy to the shallow waters over adjacent mudflats and deeper waters of San Pablo Bay. Algae on the mudflats, exposed to abundant light alternating with abundant water, produce and expel oxygen into the water and air.

Most marine life in the Bay either depends directly on the marshes and mudflats for its sustenance or indirectly depends upon them by feeding upon other marine life so nourished. Invertebrates which colonize ponded areas are an important food source for waterfowl and a variety of shorebirds and wading birds. Large numbers of birds, including ducks and geese, come to the marshes to feed on the lush vegetation or on the brackish-water animals that thrive there. Shorebirds, such as the great egret (*Casmerodius albus*), snowy egret (*Egretta thula*), and great blue heron (*Ardea herodias*) depend upon the marshes and mudflats for both food and shelter. Raptors such as northern harrier (*Circus cyaneus*), American kestrel (*Falco sparverius*), and red-tailed hawk (*Buteo jamaicensis*) forage over marshland habitats for prey. Marshland communities also provide food and cover opportunities for a variety of mammals, reptiles, and amphibians. Special status species known to occur in local saltwater and brackish-water marshes include the salt marsh harvest mouse (*Reithrodontomys raviventris*), California clapper rail (*Rallus longirostris obsoletus*), California black rail (*Laterallus jamaicensis coturniculus*), salt marsh yellowthroat (*Geothlypis trichas sinuosa*), long-billed curlew (*Numenius americanus*), and California brackish water snail (*Tryonia imitator*).

The bayside plains adjacent to Novato Creek east of Highway 101, and those along the lower reaches of the Petaluma River and Miller Creek, are subject to tidal action and support saltwater marsh and brackish-water marsh biotic communities. The marshes in the Novato Planning Area, in combination with other marshland communities in the San Francisco Bay Area, represent by far the largest estuary still existing along California's coastline, and provide essential resting, feeding, and wintering habitat for millions of birds of the Pacific Flyway extending from Canada to Mexico. Because of the high ecological value of these biotic communities and the widespread losses of coastal marshes to

agricultural and urban land uses, the northern coastal salt marsh and coastal brackish marsh communities are listed in the California Department of Fish and Game Natural Diversity Data Base as sensitive habitat types.

Freshwater Wetland

Freshwater wetlands occur as a result of seasonal inundation of low-lying basins or depressions from freshwater sources such as stormwater runoff or stream overflow. Freshwater wetland communities may occur in association with terrestrial habitats or aquatic habitats. Species composition in the freshwater wetland community varies with location, as well as with degree and frequency of saturation, but vegetation commonly includes tules (*Scirpus spp.*), cattails (*Typha spp.*), nutsedges (*Cyperus spp.*), and saltgrass (*Distichlis spp.*). Hydrophytic forbs are common in areas saturated for only short periods during the year. Vegetation in the freshwater wetland community may occur as a series of concentric rings which follow basin contours and reflect the relative depth and duration of flooding.

Typically, freshwater wetlands are among the most productive wildlife habitats in California. A detailed discussion of the many functions wetlands provide is included in *Status and Trends Report on Wetlands and Related Habitats in the San Francisco Estuary* (ABAG, December 1991). To summarize the more important functions:

1. They provide food chain support.
2. They provide fish and wildlife habitat especially for waterfowl. They provide habitat for rare and endangered species.
3. The agricultural habitat provides feeding, roosting, nesting and refuge for wetland-associated birds and animals. The diked baylands used for hay growing may support extensive bird populations in winter and spring.
4. They provide recreation and open space.
5. They moderate hydrologic processes. They can provide peak flood reduction, attenuation of stormwater flows, sediment stabilization, and groundwater recharge.

Many of the wetlands in the Novato area are seasonal wetlands occurring in areas that were once part of the Bay and have been diked off to provide agricultural land. These important sites currently support seasonal wetlands throughout much of their extent.

Farmed wetlands comprise 61 percent of the total wetlands in the San Francisco Estuary. The U.S. Fish and Wildlife Service has mapped the wetlands of Marin County (U.S. Fish and Wildlife Service, April 1991). The diked baylands east of Highway 101 generally are classified as palustrine (i.e., shallow ponds, marshes, swamps, and sloughs). Much of this palustrine habitat is currently used for farming (oat hay production). While farmed palustrine habitat may exhibit only seasonal wetlands scattered across the site, generally, wetland vegetation would re-establish in these areas if farming operations were ceased (Pratt, personal communication, 1/26/94). These diked baylands, which contain seasonal wetlands, are considered very vulnerable to development (ABAG, December 1991, p. 5). Because they may be wet only part of the year, the extent of seasonal wetlands are highly debated, they may not be highly valued, and jurisdictional limits may not afford them protection (ABAG, 1991, p. 5).

The San Francisco estuary included about 628,500 acres of tidal marsh at the time of European colonization. Most of this habitat has been converted to other habitats, including 85,000 acres of diked wetlands, 36,600 acres of salt ponds, and 385,800 acres of agricultural and pasture lands. This conversion has had a significant effect on the functioning of the estuary as a whole and on fish and wildlife resources associated with wetlands in particular (ABAG, 1991, p. 103).

BCDC and ABAG have conducted in-depth analyses of these diked baylands. Those analyses describe the significant value these lands have for wildlife. These seasonal wetlands provide essential feeding, nesting, and roosting habitat at a time of year when California's limited wetland acreage must support a much larger than normal bird population. In addition to providing supplemental foraging habitat for waterfowl (dabbling ducks and diving ducks), the seasonal wetlands play a critical role in supporting migratory shorebirds. When high tides cover intertidal mudflats, seasonal wetlands adjacent to the Bay provide alternate foraging habitat in winter. These wetlands provide roosting habitat for larger shorebirds during high tides and shelter for waterfowl as well as shorebirds during storms. These wetlands provide habitat for endangered species, resident waterbirds, small mammals, upland game birds, passerine birds, and raptors.

Extensive surveys of seasonal wetlands conducted by the U.S. Fish and Wildlife Service indicate that 19 species of migratory waterfowl and 20 species of migratory shorebirds utilize these wetlands for feeding and roosting in the winter. A total of 234 bird species have been observed in seasonal wetlands and surrounding transitional habitat (ABAG, 1991, p. 59). The baylands which are seasonally wet provide fresh water and wetland conditions next to the saline Bay waters during the fall and spring. This juxtaposition of habitats provides food, cover, and shelter that is essential to migratory waterfowl and shorebirds.

It is noted that there is a difference between true freshwater wetlands (dominated by cattails and tules) and most of the wetlands that seasonally form on historic baylands. The latter are primarily shallow-ponded and are salt to brackish in nature because of the salt content remaining in the soils. these largely unvegetated seasonal ponds provide roosting and foraging habitat for shorebirds and waterfowl.

Diked baylands also provide an opportunity for restoration and the creation of new wetlands. Given the drastic loss of wetlands in the Bay Area and the nation as a whole, the presence of areas where wetlands could be re-created is an important resource.

In addition to their ecological values, diked baylands are an important agricultural resource. For example, the oat hay produced on Novato area baylands is a significant portion of the hay used by the North Bay dairy industry.

Riparian

Plant species found in local riparian communities include red willow (*Salix laevigata*), yellow willow (*Salix lasiandra*), arroyo willow (*Salix lasiolepis*), California bay (*Umbellularia californica*), white alder (*Alnus rhombifolia*), Oregon ash (*Fraxinus latifolia*), walnut (*Juglans hindsii*), valley oak (*Quercus lobata*) and coast live oak (*Quercus agrifolia*). Introduced species used for landscaping, such as Monterey pine (*Pinus radiata*), are also found growing in some riparian communities. Shrubs such as blackberry (*Rubus vitifolius*), poison oak (*Rhus diversiloba*), California rose (*Rosa californica*), and snowberry (*Symphoricarpos* spp.) are common understory species, with coyote bush

(*Baccharis pilularis*) and sweet fennel (*Foeniculum vulgare*) occurring along the tops of the creekbanks.

The complex structure and diversity of vegetation within the riparian community, as well as its close proximity to water, creates an extremely productive habitat which supports numerous species of mammals, birds, and reptiles. In California, riparian communities support a greater variety and density of wildlife than any other type. The value of riparian habitat in supporting an abundance and diversity of wildlife stems from its usefulness in providing nesting and roosting sites, escape and thermal cover, feeding and watering areas, and preferred migratory routes for many species. The shade provided by trees along watercourses helps maintain cooler water temperatures and this retards algae blooms and enhances fish habitat. Dense tree growth also protects streambanks from erosion.

Wildlife common in the riparian habitat include opossum (*Didelphis marsupialis*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), and dusky-footed woodrat (*Neotoma fuscipes*). Birds which commonly nest in the local riparian habitats include red-shouldered hawk (*Buteo lineatus*), Nuttall's woodpecker (*Picoides nuttallii*), and tree swallow (*Tachycineta bicolor*). Migrant birds, including western flycatcher (*Empidonax difficilis*), Swainson's thrush (*Catharus ustulatus*), and warbling vireo (*Vireo gilvus*) occur seasonally in the local riparian vegetation type. The red-legged frog (*Rana aurora draytoni*) is a special status species which occurs locally in riparian vegetation types.

Riparian vegetation within the project study area varies from one location to another, depending on flow and seasonality of the stream as well as the level of human disturbance. Some of the naturally-occurring riparian vegetation along the creeks in the Planning Area has been reduced or eliminated as a result of local flood control measures. The most well-developed riparian communities, in which trees form a more or less continuous band of tall, dense vegetation, occur along the upper reaches of Novato Creek and Arroyo San Jose Creek. Along the smaller, seasonal creeks, vegetation may consist of low willows and thickets of blackberry and poison oak. Vegetation in more disturbed sites may be reduced to species most commonly found in a freshwater wetland community.

Riparian habitat is considered scarce because it only forms along watercourses and lakes and because much of this habitat type in the California landscape has been lost to agricultural uses and urbanization. Over the last 130 years, an estimated 98 percent of the state's riparian forests have been lost (approximately 763,000 acres). Riparian vegetation is sensitive to bank erosion and changes in flow, especially reduced summer flow.

Grassland/Oak Savanna

The perennial bunch grasses which once dominated the original California grasslands have been widely replaced by introduced annual species. Grass species common in the annual grasslands include wild oats (*Avena fatua*), soft chess (*Bromus mollis*), ripgut brome (*Bromus diandrus*), red brome (*Bromus rubens*), and foxtail fescue (*Festuca megalura*). Common forbs include broadleaf filaree (*Erodium botrys*), redstem filaree (*Erodium cicutarium*), turkey mullein (*Eremocarpus setigerus*), sweet clovers (*Melilotus spp.*), and bur clover (*Medicago hispida*), among others. These annual grasses and forbs are now considered to be permanent members of the annual grassland community. While there are undoubtedly areas that maintain native grassland species, no survey of such sites has been conducted.

Many wildlife species commonly occur in local annual grasslands. Reptiles common in the grassland community include western fence lizard (*Sceloporus occidentalis*), common

garter snake (*Thamnophis sirtalis*), and western rattlesnake (*Crotalus viridis*). Mammals typically found in this habitat include black-tailed jackrabbit (*Lepus californicus*), California ground squirrel (*Spermophilus beecheyi*), Botta's pocket gopher (*Thomomys bottae*), western harvest mouse (*Reithrodontomys megalotis*), California vole (*Microtus californicus*), badger (*Taxidea taxus*), and coyote (*Canis latrans*). Birds known to breed in annual grasslands include burrowing owl (*Athene cunicularia*), horned lark (*Eremophila alpestris*), and western meadowlark (*Sturnella neglecta*).

The grassland community also provides foraging habitat for a variety of animals which require special habitat features such as cliffs, caves, ponds, or woody plants for breeding, resting, and escape cover. Consequently, grassland communities which border riparian zones, woodlands, or other natural habitats will have higher wildlife values. Animals which may rely on grassland communities for foraging habitat include turkey vulture (*Cathartes aura*), northern harrier (*Circus cyaneus*), American kestrel (*Falco sparverius*), black-shouldered kite (*Elanus caeruleus*), prairie falcon (*Falco mexicanus*), and red-tailed hawk (*Buteo jamaicensis*).

Grasslands with scattered oak trees are referred to as savannas. Wildlife species found in the oak savanna vegetation type are similar to those which occur in the grassland habitat described above. The scattered oaks provide shelter and additional food sources which support a mini-ecosystem of insects and birds within the grassland community. Acorns from the oaks are commonly used by scrub jay (*Aphelocoma coerulescens*), yellow-billed magpie (*Pica nuttalli*), and western gray squirrels (*Sciurus griseus*). The oaks may also be used as nesting and resting sites for raptors which forage in adjacent grasslands, and larger mammals may utilize the additional cover provided by the trees.

Grassland and oak savanna communities occur on exposed undeveloped hillsides in the northerly portion of the Planning Area. Grassland and oak savanna communities extend into mixed oak woodland communities (described below) on north-facing slopes and in mesic canyons and ravines. The habitat type around Stafford Lake is mostly oak savanna consisting of dispersed live oaks and various native and introduced grasses.

Hillside grassland communities are valuable in providing soil conservation in local watersheds. Grasslands are sensitive to loss of vegetation and erosion which are followed by an incremental increase in downstream winter flow and sedimentation. Overgrazing and livestock trampling, careless grading, and extensive cutting and filling can cause permanent loss of soils and reduce the growing capacity of the hillsides.

The deep root system of oak trees makes the savanna community particularly valuable for erosion control on slopes otherwise supporting only grassland vegetation. In the Novato Planning Area, most oak savanna areas are now developed, with few remaining massive oaks that survive in developed valleys. The oak savanna, dependent on the survival of the oak, is a particularly sensitive community. Natural replacement seedlings are destroyed by grazing of cattle and other herbivores such as the black-tailed deer (*Odocoileus hemionus*). Oaks are particularly sensitive to damage by accumulation of water at the root zone. A weakened tree is subject to attack by the oak moth, western oak bark beetle, and especially oak root fungus which results from excess water. Depletion in groundwater or changes in drainage can deprive the deep roots of essential moisture.

Oak/Hardwood Woodland

The oak woodland community supports a mixture of deciduous and non-deciduous oaks, California bay (*Umbellularia californica*), madrone (*Arbutus menziesii*), and buckeye

(*Aesculus californica*). This vegetation covers most of the north-facing slopes in the Planning Area, and fills canyons and ravines on more exposed slopes. Where trees are spaced so that light can penetrate, grass is typical. Denser, forest like woodlands have small shrubs, frequently poison oak, and numerous shade-loving wildflowers as low vegetation.

Animal species are highly diverse in oak woodland communities. A variety of birds such as acorn woodpeckers, flickers, hummingbirds, and many songbirds use woodlands seasonally or throughout the year. Deer, skunks, grey squirrels, and raccoons are all common. Other wildlife species in or near the woodland areas include the western fence lizard, western terrestrial garter snake, gopher snake, Pacific tree frog, pocket gopher, various bats, white-footed mouse, western harvest mouse, Audubon's cottontail rabbit, blacktailed jackrabbit, opossum, turkey, mockingbird, scrub jay, western meadowlark, mourning dove, crow, Hutton's vireo, western kingbird, loggerhead shrike, rough-winged swallow, violet-green swallow, barn swallow, cliff swallow, song sparrow, white-crowned sparrow, red-tailed hawk, quail, and numerous insect species including oak gall wasp. This variety is indicative of the high productivity of the vegetative community. Additionally, the proximity of oak woodland to open grassland and riparian communities in the Novato area provides a situation where shelter and cover are located close to feeding areas. This promotes a greater diversity of wildlife.

Woodlands protect the watershed by intercepting the impact of rain and permitting slow percolation of rainwater. Soil development is also a significant feature of woodlands. Woodlands are sensitive to severe reductions in soil moisture caused by grading and changes in drainage patterns or by drought in an exceptionally dry year. Construction activities can also endanger this biotic community. Oak root crowns buried in cut-and-fill operations can expose the tree to lethal fungus disease. Madrone cannot tolerate heavy grading and site development. Compaction of soil around tree-root zones limits oxygen exchange and can result in damage to the tree.

Agricultural Land

The Agricultural Land designation includes row crops and orchards, as well as weedy open space areas associated with seasonal agricultural production. Agricultural cultivation can be damaging when natural vegetation is removed in excess. The removal of riparian vegetation can cause serious cumulative damage to streams and rivers. However, agricultural crops, as well as orchards, vineyards, and hedgerows between fields, can provide valuable wildlife habitat.

Cropland may provide habitat for black-tailed jackrabbit (*Lepus californicus*), ring-necked pheasant (*Phasianus colchicus*), waterfowl, some raptors, and a variety of rodents and reptiles. Wildlife typically found in nut orchards include common flicker (*Colaptes auratus*), scrub jay (*Aphelocoma coerulescens*), American crow (*Corvus brachyrhynchos*), plain titmouse (*Parus inornatus*), Brewer's blackbird (*Euphagus cyanocephalus*), house finch (*Carpodacus mexicanus*), and California ground squirrel (*Spermophilus beecheyi*). Orchard crops such as apples and cherries are eaten by these same species, in addition to band-tailed pigeon (*Columba fasciata*), yellow-billed magpie (*Pica nuttalli*), western bluebird (*Sialia mexicana*), American robin (*Turdus migratorius*), varied thrush (*Ixoreus naevius*), northern mockingbird (*Mimus polyglottos*), and cedar waxwing (*Bombicilla cedrorum*). Desert cottontail (*Sylvilagus audubonii*), western gray squirrel (*Sciurus griseus*), coyote (*Canis latrans*) and raccoon (*Procyon lotor*) are also found in agricultural habitat types.

Agricultural lands in the Planning Area are located primarily in valley areas and on diked baylands. Agricultural lands in the Planning Area along with large expanses of agricultural land located in the North Bay provide critical seasonal habitat for migratory waterfowl and shorebirds during the winter. This large area of unmanaged habitat, even though it remains in agricultural use, serves a similar function as managed wetlands because it is a single habitat unit, with some ponds, some dry areas, some areas providing food, some cover and some shelter (BCDC, 1982).

Urban/Landscaped

The Urban/landscaped classification is used to indicate higher density business, commercial, and residential areas in the Planning Area. The urban area is roughly defined by the Novato City Limits, which occupies former grassland, oak woodland, and savanna areas. The urban area is occupied primarily by man-made structures. Vegetation within the urban limits ranges from regularly maintained landscaping plants to grass and weed associations in vacant lots.

Man has provided wildlife habitat in the form of exotic trees, shrubs, flowers, and vegetables that have replaced native plants in the urban landscape. Typical inner city wildlife species include rock dove (*Columba livia*), European starling (*Sturnus vulgaris*), house mouse (*Mus musculus*), house rat (*Ratus ratus*), house sparrow (*Passer domesticus*), and house finch (*Carpodacus mexicanus*). The increased area and diversity of landscaping in suburban areas may provide habitat for scrub jay (*Aphelocoma coerulescens*), northern mockingbird (*Mimus polyglottos*), raccoon (*Procyon lotor*), opossum (*Didelphis marsupialis*), striped skunk (*Mephitis*), and California slender salamander (*Batrachoseps attenuatus*).

Eucalyptus windrows, planted many years ago to provide protection from the wind and conserve heat on their leeward side, are now a component of the urban landscape. These trees have become important roosting sites for predatory birds such as hawks and owls; other smaller birds use stands for shelter. These windrows also provide shelter for typical grassland species. Beneath eucalyptus, most vegetation is precluded. Major eucalyptus windrows are located on Eucalyptus Avenue and on the bay plain north of Highway 37.

The significance of urban vegetation as habitat resources is often overlooked. Their sensitivity is difficult to determine as replacement can be accomplished by replanting. Large, mature, non-natives such as elms may be as valuable as natives, and their loss from disease or damage from development are of equal concern.

Regulatory Framework Concerning Wetlands

A variety of state and federal agencies have some form of jurisdiction or advisory capacity regarding future development in wetland areas. The number of regulations, policies, guidelines, and agencies that may be involved with permitting or reviewing projects in wetlands is enormous. The subsections below summarize agency responsibilities. A more detailed discussion of the more pertinent guidelines and agency responsibilities is included in Appendix B.

U.S. Army Corps of Engineers

The Federal Clean Water Act has as its goal to restore and maintain the physical, chemical, and biological integrity of the nation's waters. Section 404 of the Federal Clean Water Act regulates the discharge of fill material into "waters of the United States," which includes

wetlands. If filling of wetlands is part of a project, then the U.S. Army Corps of Engineers must issue a permit allowing this fill activity.

The determination of what constitutes a wetland is a complex process. There is little agreement even among governmental agencies as to what constitutes a wetland (for example, refer to the Comments to the Draft EIR for Bel Marin Keys Unit 5 [ESA, 1993] from various governmental agencies regarding wetland issues on that project). The guidelines vary from agency to agency. The Corps has responsibility for determining which wetlands meet Clean Water Act requirements. The guidelines for determining jurisdictional wetlands have been amended on occasion; currently, the 1987 manual (*Federal Manual for Identifying and Delineating Jurisdictional Wetlands*) published by the Corps is used to determine jurisdictional wetlands. Under this manual, a wetland is an area that (1) shows evidence of inundation or saturation by surface or groundwater for at least two weeks during an average rainfall years (hydrology), (2) shows a prevalence of wetland vegetation (hydrophytes) if the site is undisturbed, and (3) has typical wetland (hydric) soils, that is, soils formed under saturated, anaerobic conditions.

When a project is proposed in an area with potential wetlands, a study is done (a preliminary wetland delineation) by the applicant per the guidelines established in the Corps' manual. A determination is made as to the area and acreage of soils that meet the wetland criteria. The Corps will review these data and conduct their own field visit to confirm the delineation and to identify areas under Corps Section 404 jurisdiction.

Once the extent of the Corps jurisdiction is known, the applicant will determine whether any proposed activities will require filling of the delineated wetlands. If filling of wetlands is necessary, then the applicant must seek a permit from the Corps for that work. If the area to be filled is small and no sensitive rare or endangered species occur in the area, it is possible that filling will be authorized under certain Nationwide permits. These Nationwide permits apply in limited circumstances where the Corps has determined that the fill will not constitute a significant impact on the environment if carried out according to the limitations and conditions of the pertinent Nationwide permit.

If the proposed fill is not authorized under a Nationwide permit, the applicant would be required to obtain approval under the individual permit program administered by the Corps under Section 404. When an individual permit is required, the Corps analysis will include a determination of whether the project is "water dependent." The analysis per Section 404(b)(1) must include an analysis of practical alternatives to filling of wetlands. If the Corps authorizes a permit, it can require mitigations for the loss of jurisdictional wetlands. The Corps is required to consult with the U.S. Fish and Wildlife Service, the EPA, and California Department of Fish and Game in carrying out its discretionary authority under Section 404. If an applicant is able to demonstrate that proposed filling of wetlands is necessary and that there is no practicable alternatives to this filling, then the project mitigation plan would be reviewed by the U.S. Fish and Wildlife Service in relation to their mitigation policies.

The Corps and the Environmental Protection Agency (EPA) have established a specific sequence for mitigation of filling of Section 404 wetlands, as follows: (1) avoidance of fill; (2) minimization of fill where avoidance is not practicable; and (3) compensation in the form of creation or restoration of wetlands, where neither of the prior means is practicable. While the Corps has not established an explicit standard for the acreage ratio of compensatory mitigation, the general guide is that mitigation should be "in-kind," "on-site," and that it should result in "no net loss" of jurisdictional wetlands (ESA, August 1993, pp. 44-45)

The Corps also has jurisdiction over lands that are at or below the elevation of Mean High Water pursuant to Section 10 of the Rivers and Harbors Act of 1899. This includes much of the lands east of Highway 101 (i.e., the diked baylands). Filling of lands that fall within the jurisdiction of Section 10 lands, but do not meet the wetland criteria of Section 404, is not subject to as much scrutiny as Section 404 wetlands. Filling of Section 10 lands are not subject to Section 404 (b)(1) Guidelines which require an alternatives analysis. The Corps is not required to require mitigation for such filling. However, the Corps does have the option of requiring mitigation. Wetland protection is not considered per se under Section 10, and the supplementary criteria for permit evaluation are broader than for Section 404.

U.S. Environmental Protection Agency

The EPA has an oversight role in the Corps analysis and issuance of permits for filling of Section 404 wetlands. The EPA can override a Corps decision and refuse issuance of a permit or require additional mitigation. In general, the EPA advises the Corps. As an example, on the Bel Marin Keys Unit 5 project, the Corps determined that 969 acres of the project site were under the jurisdiction of Section 10 rather than Section 404. The EPA provides special guidance to the Corps regarding the jurisdictional determination under Section 404 in diked baylands. EPA has requested that the Corps revisit its previous jurisdiction and find that all portions of the site under the jurisdiction of Section 10 are also under the jurisdiction of Section 404.

U.S. Fish and Wildlife Service

The U.S. Fish and Wildlife Service (USFWS) operates under a number of statutory and administrative authorities. Its basic responsibilities concern migratory birds, anadromous fish, and endangered species. The USFWS is an advisory agency to the Army Corps on Section 404 and Section 10 projects. The USFWS will review mitigation plans for these projects. Briefly, the USFWS policy identifies four different resource categories with criteria and mitigation goals for each. The Regional Fish and Wildlife Service will review the resources on the site and assign a category to each. Each category has a specific set of mitigation requirements.

The USFWS has its own definition of wetlands that is often more extensive than used by the Corps. Wetlands are defined by the mapping and wetland classifications done in the *Atlas of National Wetlands Inventory Maps* (in this case for Marin County). All palustrine emerging wetlands are considered wetlands. Palustrine farmed lands include considerable wetlands which must be determined on a site-by-site review. Palustrine lands in general, if not farmed, would revert to wetlands.

The USFWS position regarding these palustrine, or diked baylands, is that these lands provide a real opportunity to expand wetlands. Seasonal wetlands can be enhanced and appropriate sites can be restored to tidal action (Pratt, personal communication, 1/26/94).

California Department of Fish and Game

The California Department of Fish and Game has authority to oversee work done in streams pursuant to Fish and Game Code 1601-1603. An applicant who proposes to substantially divert the natural flow of a stream, substantially alter its bed or bank, or use any material from the streambed must first enter into a "Streambed Alteration Agreement" with CDFG.

The State's position on wetlands is that departments, commissions, and boards of the Resources Agency (which includes CDFG) should not authorize or approve projects that fill or harm wetlands (*1977 Policy for Preservation of Wetlands in Perpetuity*, Resources Agency). Exceptions to the policy are allowed when more than one-half acre is affected only if (1) the project is water-dependent or an essential transportation, water conveyance, or utility project; (2) there is no feasible, less environmentally damaging alternative; (3) the public trust is not affected; and (4) adequate compensation is included.

Per a revised Wetlands Policy Act adopted in 1987, CDFG adopted the USFWS definition for wetlands. The 1987 Wetlands Policy also set specific guidelines for compensation for loss of wetland habitat values and acreage by order of preference. The highest preference was given to in-kind, on-site compensation. When on-site compensation is not available, the next highest priority was given to in-kind, off-site. When in-kind compensation is not possible, out-of-kind, on-site is preferable. Finally, out-of-kind, off-site compensation is considered for no net loss of wetlands when the other types are not feasible.

As mentioned previously, the Corps consults with CDFG on Section 404 projects. CDFG has taken a position that loss of wetlands and diked baylands is significant. The historic wetlands can be restored and provide valuable wildlife habitat (see, for example, CDFG letter in ESA, August 1993, pp. C.36-C.38). The CDFG position on diked baylands is that if there are seasonal and/or jurisdictional wetlands scattered through an area of diked baylands, CDFG will oppose development of such an area. If there are isolated wetlands of lesser quality, then they would not necessarily oppose development but seek mitigation at a 3:1 ratio (i.e., three acres of new wetland habitat for every acre filled). For very small, isolated wetlands, a mitigation of one acre created for one acre filled might be required (Botti, personal communication, 1/20/94).

State Lands Commission

The SLC has management jurisdiction for lands owned by the State which include all tidelands, submerged lands, and beds of navigable waterways. The landward boundaries of State ownership are generally based upon the ordinary high water marks of these waterways as they last naturally existed. The SLC also manages Public Trust easements including easements to historic tidal sloughs, rivulets, and ponds. The SLC does not require permits or leases for the use of its trust easement lands, however, the SLC reviews proposed uses and comments on uses inconsistent with Public Trust needs, including ecological values.

Bay Conservation and Development Commission

The Bay Conservation and Development Commission (BCDC) was established by the McAteer-Petris Act. This Act and its amendments gives jurisdiction over San Francisco tidelands and shorelines to the BCDC. BCDC has five types of jurisdictional lands, three of which occur in Novato (McAdam, personal communication, 1/20/94). These include:

1. Bay jurisdiction. Lands touched by tidal water since 1965 as measured from the mean high tide line. Novato Creek between the Bay to the easternmost high voltage transmission lines is within this jurisdiction as is Petaluma River downstream of the Highway 37 Bridge.
2. Shoreline. A 100-foot shoreline along the Bay measured inland from the line of highest tidal action.

3. Certain waterway jurisdictions. In the Novato area, this jurisdiction includes the Petaluma River between the Highway 37 Bridge and Adobe Creek. There is no 100-foot jurisdiction.

Any development within these jurisdictions requires BCDC authorization prior to construction. Within the "bay" jurisdiction, fill can only be approved for water-oriented uses such as ports, water-related industry, wildlife refuges, and water-oriented recreation, and then only if there is no alternative upland location. Work in the "shoreline" jurisdiction can only be authorized if BCDC determines that the project provides the maximum feasible public access consistent with the project.

BCDC has also adopted policies for diked baylands that are outside their immediate jurisdiction. The policies are used by BCDC to review and comment to the Corps on proposed projects in diked baylands. These policies are a recognition that diked historic baylands have a direct ecological interrelationship with the Bay and have high Bay-related wildlife value, provide critical seasonal habitat for migratory waterfowl and shorebirds during the winter, and present one of the last major opportunities to protect and enhance the natural Bay environment. These policies recommend maintaining current use on diked baylands for as long as possible. If agriculture or other existing uses cannot be maintained, then future development should be limited as much as possible to dry portions of the site and mitigation required for adversely affected wildlife values. The policies recommend restoration of diked baylands wherever possible.

Regional Water Quality Control Board

The Regional Water Quality Control Board, San Francisco Bay Region (RWQCB) under the California State Water Resource Control Board (CSWRCB) is responsible for maintenance of water quality within San Francisco Bay and adjoining waters. As part of the Corps Section 404 permit review process, the RWQCB must issue a Water Quality Certification. The RWQCB will also review the project for consistency with Waste Discharge requirements under the State land disposal regulations (Subchapter 15).

In considering the Certification, the RWQCB can issue waivers for fill less than two acres. For more than two acres of wetland removal, the RWQCB requires a mitigation plan, a public hearing, and approval of water quality certification by the CSWRCB as an item on their agenda. In the event of a conflict between the State and the Corps, the RWQCB has independent authority under the State Water Code to regulate discharges to wetlands through waste discharge requirements or other orders (ESA, February, 1993, p. E-8).

In May, 1991, the EPA published the Proposed Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters. The RWQCB oversees conformance with this program. Marin County and its cities have prepared a report under The Baseline Program that describes ways to ensure no further increase in water pollution for non-point sources. A Comprehensive Program that includes actions to control and reduce stormwater pollution is required for cities greater than 100,000 or designated areas. To this point, Marin County is exempt from the requirement to prepare a Comprehensive Program. However, Congress is currently considering the Clean Water Act; this may involve adding the requirement for Comprehensive Programs for urban areas as defined by the census. In this case, this would extend the requirement to the entire Bay Area. If Congress does, in fact, extend the requirement, then Novato and Marin County would be required to prepare a Comprehensive Program. These programs are more stringent and enforceable than the Baseline Programs; they require municipal stormwater permits.

City of Novato

The existing General Plan states that former marshes or water areas now diked from tidal action should be preserved with only water-dependent development and non-urban uses such as agriculture permitted (Natural Environment Section, Policy 5). Local, State, and federal actions to restore tidal action to diked areas should be pursued when the increase in habitat value and biological productivity warrants its (Policy 6). Significant resource areas to be preserved include wetlands. These lands will be preserved through public acquisition, contract (such as agricultural land preservation under the Williamson Act), or regulation of development so that the significant feature is not adversely impacted.

Discussion

The reason for presenting this lengthy discussion of agency responsibilities is two-fold. First, there is a need to give a clear summary of those responsibilities. It is noted that the previous discussion is simply an outline of the numerous law, regulations, and guidelines, and the reader is referred to Appendix B for a more detailed discussion. Second, the numerous and variable definitions of what is a wetland, the value of the resource, and the goals and policies for protecting or developing that resource indicate that there is not a agreed on, recognized policy for the future of wetlands, especially for diked baylands. Different agencies recommend different protection strategies and require different mitigations. The reader is referred to three recent EIRs and the Comments and Responses to Comments for those EIRs (the Final EIRs) for three projects in the Novato Sphere of Influence to see the varying opinions regarding wetland delineation, protection, mitigations, and alternative (see EIRs prepared for the Hamilton Field Project, the Bahia Master Plan Revision, and the Bel Marin Keys Unit 5 project)

In general, there is an agreement that existing wetlands are a valuable resource that should be protected unless development in those areas is necessary. The issue is less clear when considering the diked baylands. While most agencies view these former wetlands as valuable wildlife habitat and areas that could be restored to wetlands, there is varying ability to seek alternative actions or mitigations for projects proposed for these areas.

In many cases, these palustrine areas contain existing wetlands interspersed between non-wetland areas. Development of drier portions while retaining intervening wetlands can significantly diminish the resource value of the system as a whole.

It is likely that new wetland guidelines will be developed as the various agencies attempt to work together and avoid potential disputes. An example of such inter-agency efforts is the current Memorandum of Agreement between EPA, Army Corps, U.S. Fish and Wildlife Service, and the Soil Conservation Service (SCS) to develop guidelines for implementation of a September, 1993 rule that appointed SCS as the agency to determine wetlands for farmed lands under Section 404 and the Food and Security Act. SCS uses different wetland guidelines than these other agencies. The MOA will attempt to determine common guidelines for this case. The SCS jurisdiction does not apply to the Bay Area where the Corps retains wetland jurisdiction. However, this is an example of how the various agencies are attempting to develop common guidelines and definitions (Pratt, personal communication, 1/26/94).

A second example is the formation of the Long Term Management Strategy Group to determine future disposal of dredge materials from the bay. This group is comprised of the Corps, EPA, BCDC, and RWQCB.

Given these joint planning efforts, it is possible that a future joint effort will be made to develop a Regional Wetland Management Plan.

Fisheries

The variety of aquatic communities in the Novato Planning Area, including estuaries, rivers, and lakes, support a number of different fisheries. The following discussion considers each of these fisheries' environments.

Many species of fish are supported by the estuarine environment of San Pablo Bay. In the Novato Planning Area, estuarine communities occur where the seawater in San Pablo Bay mixes with freshwater from Novato Creek and the Petaluma River. On the basis of an inventory of Napa Marsh fishes conducted by the California Department of Fish and Game, the following fishes are considered to be likely inhabitants or visitors of local estuarine communities: yellowfin goby, longfin smelt, split tail, staghorn sculpin, tule perch, and threadfin shad. The tidewater goby is a special status species which may occur in the brackish waters of estuarine communities in the northern San Pablo Bay.

One area in the Novato Planning Area contains man-made lagoons with unique aquatic environments. This is the Bahia area. Fishes frequenting these lagoons are probably similar to those species found in the natural estuarine communities. However, the lagoons are subject to algal blooms occurring in the late spring, summer and autumn. Decomposition of blooms, which include green algae and *Mesodinium robrum* (red tide organism), decreases dissolved oxygen in the water and results in large-scale fish kills.

The northern reach of San Pablo Bay serves as the migration route for several anadromous fish (fish which ascend rivers from the sea for breeding), including coho salmon, steelhead, white and green sturgeon, and the American shad. Anadromous salmonids have been observed in the flood control ponds at the confluence of Pacheco Creek, Arroyo San Jose Creek and Novato Creek. Studies of Pacheco Creek concluded that the creek is not likely used for salmonid spawning (EIP, 1988, Technical Background Documents). At one time, Novato Creek supported a small run of anadromous fish (steelhead); however, the occurrence of steelhead in Novato Creek today is incidental and not significant (EarthMetrics, 1984). Salmonid surveys have not been conducted for the other creeks in the Planning Area.

Riverine fish found in recent seines taken by biologists of the California Department of Fish and Game (CDFG) in Novato Creek downstream from Stafford Dam included stickleback, western sucker and mosquito fish. Western roach and goldfish (from spillover at Stafford Lake) also probably occur in Novato Creek. The other creeks in the Planning Area are expected to support some combination of the same fish species. The upper reaches of Novato Creek are probably a nursery area for young striped bass and may support a limited number of adults. CDFG maintains a trout fishery in Novato Creek downstream of Stafford Dam for approximately two to three miles. Normal flows in Novato Creek and its tributaries are not sufficient to support a warmwater fishery.

An artificially maintained trout fishery existed in Stafford Lake until recently. This trout fishery in the lake was terminated due to underutilization of the fish caused by changes in the nature of sediments and excessive turbidity. Since the reconstruction of Stafford Dam, the California Department of Fish and Game has established a new warm water fishery in Stafford Lake, including large-mouth bass and red-ear sunfish.

Special Status Species

When scientific data suggest a species population has declined, the U.S. Fish and Wildlife Service (USFWS) or the California Department of Fish and Game (CDFG) may "list" a species to provide legal protection under either the Federal Endangered Species Act (FESA) or California Endangered Species Act (CESA). Depending on the severity of decline in population size and the availability of information relating to the abundance and range of a species, USFWS and CDFG may alternately choose to place taxa into one of several other "Special Status" categories. Private conservation groups, as well as other federal, state and local agencies, may also identify species of concern to them. The regulation of special status species, including state and federally threatened and endangered species, is detailed under "Regulatory Setting" in the *Existing Conditions Report*.

All special status species which may occur in the Planning Area are listed in Table 9, along with the species' habitat requirements and status. The species listed were identified through a search of the California Department of Fish and Game (CDFG) Natural Diversity Data Base (NDDDB) and the California Native Plant Society (CNPS) Inventory of Rare and Endangered Vascular Plants of California, review of recent environmental reports prepared for the Planning Area, review of the *Marin County Breeding Bird Atlas* (hereafter called the Breeding Bird Atlas), and correspondence with the Marin Chapter of the California Native Plant Society. All identified species occurrences listed by the NDDDB are mapped on Figure 8. This map should not be interpreted as showing all occurrences of sensitive species. Much of the Planning Area has not had field investigations conducted, and these field surveys are necessary to precisely determine species' presence. In addition, many of the birds, especially raptors may use portions of the Planning Area for foraging and roosting; this use is not mapped on Figure 8. Finally, the Breeding Bird Atlas identifies breeding sites for a number of bird species. However, the precise sites are not described in the Atlas. Hence, this report describes those breeding sites, but they are not included as precise locations on the map.

FIGURE 8

SENSITIVE SPECIES
OCCURRENCES

- ① Black-shouldered Kite
- ② Burrowing Owl
- ③ California Black Rail
- ④ California Clapper Rail
- ⑤ Salt Marsh Harvest Mouse
- ⑥ Tidewater Goby
- ⑦ California Brackishwater Snail
- ⑧ Mt Tamalpais Jewelflower
- ⑨ Fragrant Fritillary
- ⑩ Marin Blind Harvestman
- ⑪ Tiburon Tarplant
- ⑫ San Pablo Song Sparrow
- ⑬ Marin Dwarf Flax
- ⑭ Little Mouse-tail
- ⑮ Lobb's Aquatic Buttercup
- ⑯ Salt Marsh Yellowthroat
- ⑰ Soft Bird's Beak
- ⑱ Marin Knotweed

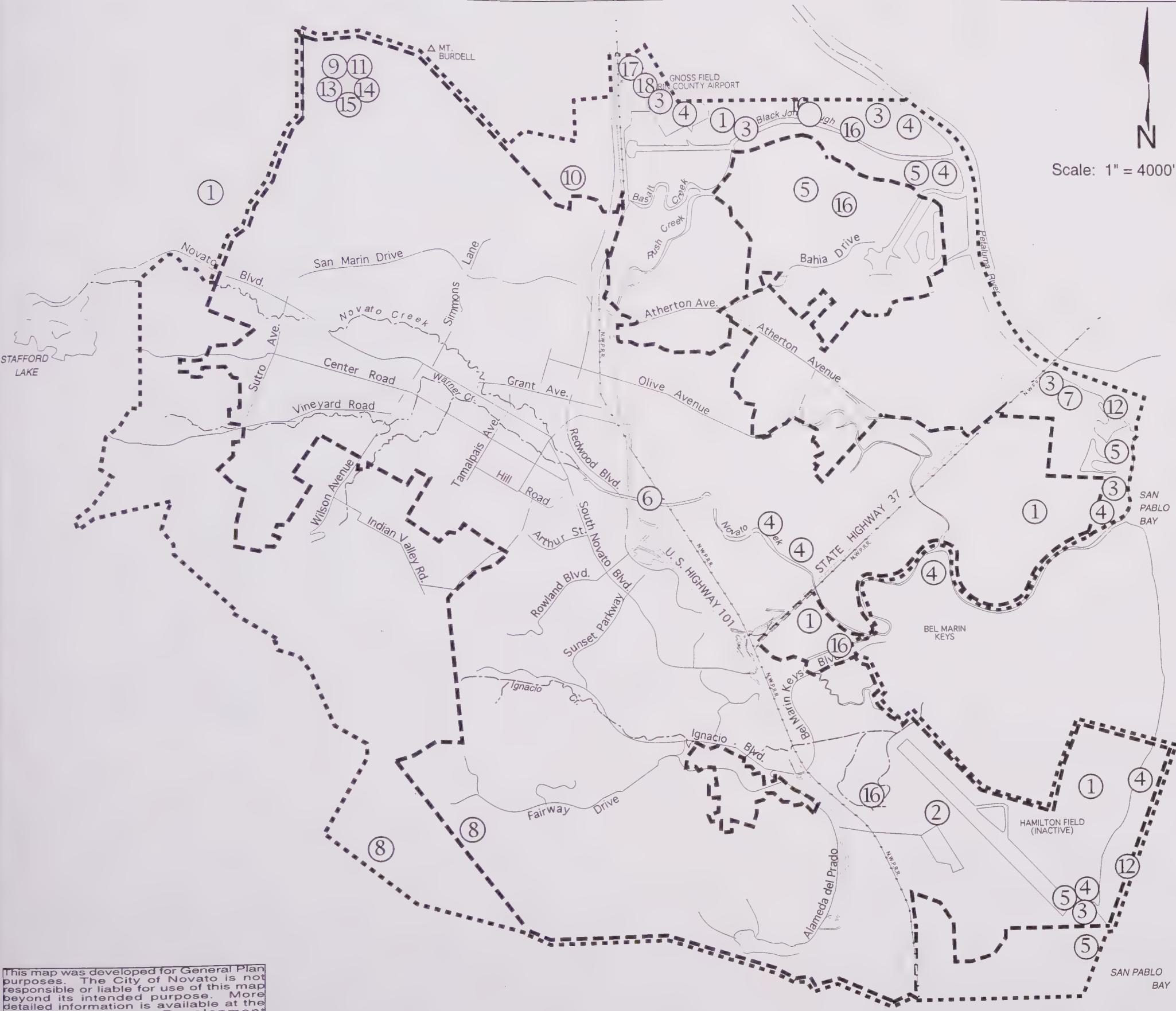
NOTE: Locations are general.

SOURCES: California Department of Fish and Game;
Nature Diversity Data Base; Project EIRs
and the California Native Plant Society

City of Novato General Plan Revision
Draft
Environmental Report

--- City Limit Line
..... Sphere Of Influence

Revised & Recirculated
November, 1995



This map was developed for General Plan purposes. The City of Novato is not responsible or liable for use of this map beyond its intended purpose. More detailed information is available at the Novato Community Development Department.

Special Status Plants and Animals Which May Occur in the Planning Area

SPECIES	SPECIES NOTES	STATUS		
		Federal	State	Other
Plants				
<i>Alopecurus aequalis</i> var. <i>sonomensis</i> Sonoma alopecurus	This species is found in riparian scrub and freshwater marsh. It is known from near Cotati west to Pt. Reyes.	FC2	None	CNPS 1B
<i>Arctostaphylos montana</i> Mt. Tamalpais manzanita	The species is found in chaparral and valley foothill grassland habitat types on ultramafic soils. The species is known from an occurrence near Mill Valley on Stinson Beach Road in 1931.	FC2	None	CNPS 1B
<i>Arctostaphylos virgata</i> Bolinas manzanita	The Bolinas manzanita occurs in broadleafed upland forest, closed cone coniferous forest, and chaparral vegetation types. The species is known from an observation about 0.5 air miles northwest of the Bolinas Military Reserve, northwest of Bolinas.	C2	None	CNPS 1B
<i>Blennosperma bakeri</i> Baker's blennosperma	This species is associated with vernal pools. Populations exist near Cotati.	FC1	None	CNPS 1B
<i>Ceanothus masonii</i> Mason's ceanothus	Mason's ceanothus occurs in chaparral vegetation communities. It is known from an occurrence east of Bootjack Camp, on the south slope of Mt. Tamalpais (0.5 miles north of the Pantoll Ranger Station).	FC2	Rare	CNPS 1B
<i>Cordylanthus maritimus</i> ssp. <i>palustris</i> Pt. Reyes bird's-beak	This plant occurs in coastal salt marshes and swamps, and is associated with <i>Distichlis spicata</i> (salt grass) and <i>Salicornia virginica</i> (pickleweed). More than 50 plants were observed in 1984 at Bucks Landing of Gallinas Creek. The plants were located between Gallinas Creek (dredged) and a filled area used as a boat storage yard. This population is presumed extant.	FC2	None	CNPS 1B
<i>Cordylanthus mollis</i> ssp. <i>mollis</i> Soft bird's-beak	This species is found in coastal salt marshes bordering the San Pablo Bay. Reported near Gness Field.	FC1	Rare	CNPS 1B
<i>Delphinium bakeri</i> Baker's larkspur	The plant occurs in coastal scrub habitats. Only one population is known today, on decomposed shale at an elevation of 300 feet, on a fire trail 1.5 miles from Bolinas Road entrance.	FC1	Rare	CNPS 1B
<i>Delphinium luteum</i> Yellow larkspur	This species is found mainly in coastal scrub. Populations exist near Petaluma.	FC1	Rare	CNPS 1B
<i>Downingia humilis</i> Dwarf downingia	The dwarf downingia is found in valley and foothill grassland habitats in mesic sites and vernal pools. The species was observed in 1961, 4.4 miles north of Sears Point in a ditch along Highway 37.	FC3c	None	CNPS 1B
<i>Fritillaria liliacea</i> Fragrant fritillary	The fragrant fritillary occurs in coastal scrub, and valley and foothill grassland habitats, often on ultramafic soils. Less than 100 plants were observed in 1983 at Mt. Burdell open space at the head of a small drainage 300 meters west of San Carlos Street gate. The species was found on clay loam soils on slightly sloping open grassland, associated with grasses, <i>Erodium</i> , <i>Zigadenus</i> , <i>Fremontii</i> , and <i>Brodiaea pulchella</i> .	FC2	None	CNPS 1B

Table 9 (continued)
Special Status Plants and Animals Which May Occur in the Planning Area

SPECIES	SPECIES NOTES	STATUS		
		Federal	State	Other
<i>Grindelia camporum</i> var. <i>parviflora</i> Great Valley gumplant	This species occurs in deep soils of valley grassland communities from Sacramento to Kern Counties and in Marin County.	None	None	CNPS 4
<i>Grindelia humilis</i> Marsh gumplant	The marsh gumplant is found in coastal salt marsh communities of the San Francisco, San Pablo and Suisun Bays.	None	None	CNPS 4
<i>Helianthella castanea</i> Diable helianthella	Occurs on grassy hillsides in broad leaf upland forest and chaparral from 500 to 4,000 feet elevation. Recently sighted in Mill Valley.	C2	None	CNPS 1B
<i>Hemizonia congesta</i> Hayfield tarplant	The hayfield tarplant occurs in northern coastal scrub communities near the coast from Del Norte to San Mateo Counties.	None	None	CNPS 3
<i>Hemizonia multicaulis</i> ssp. <i>vernalis</i> Tiburon tarplant	This species is found in Sonoma and Marin Counties, mostly away from the immediate coast. Reported from Mt. Burdell.	FC2	None	CNPS 1B
<i>Hesperolinon congestum</i> Marin dwarf flax	The species is found in serpentine grassland, and has been observed on Mount Burdell.	FC1	None	CNPS 1B
<i>Lathyrus jepsonii</i> ssp. <i>jepsonii</i> Delta tule pea	Found in tidally influenced brackish or freshwater wetlands.	C2	None	CNPS 1B
<i>Lepidium latipes</i> Dwarf pepper-grass	The dwarf pepper-grass occurs in alkaline flats and beds of winter pools below 2000 feet, largely in valley grassland communities, from San Diego to Humboldt Counties and Santa Cruz Island.	None	None	CNPS 4
<i>Monardella undulata</i> var. <i>undulata</i> Curly-leaved monardella	This species occurs in sandy places below 500 feet, in coastal strand communities from Marin to Santa Barbara Counties. The plant may also occur in northern coastal scrub and closed-cone pine forest communities.	None	None	CNPS 4
<i>Myosurus minimus</i> Little mousetail	Reported from the south slope of Mount Burdell.	None	None	CNPS 3
<i>Pentachaeta bellidiflora</i> White-rayed pentachaeta	Open, dry rocky slopes in north coastal scrub and coastal prairie habitats. Recently found in Kentfield.	C2	None	CNPS 1B
<i>Pityopus californicus</i> California pinefoot	The California pinefoot is found in deeply shaded places from 1000 to 5000 feet, in mixed evergreen and redwood forests on the northern coast.	FC3c	None	CNPS 4
<i>Pleuropogon hooverianus</i> North Coast semaphore grass	This species occurs in broadleaved upland forest habitats in moist grassy sometimes shaded areas. It is also found in vernal pool habitats with <i>Lasthenia burkei</i> . The plant occurs from sea level to 1800 feet above MSL. The species was last observed in 1941 in Woodacre between Novato and San Geronimo in a fairly dry location at the edge of the woods.	FC2	Rare	CNPS 1B
<i>Pleuropogon refractus</i> Nodding semaphore grass	This species is found in wet meadows and mountain streams below 5000 feet. It is usually associated with redwood, Douglas-fir, and yellow pine forests, from Marin County north.	None	None	CNPS 4
<i>Polygonum marinense</i> Marin knotweed	This species is found in coastal salt marsh. It is known to occur along the Petaluma River and west of Gness Field.	FC2	None	CNPS 3
<i>Quercus lobata</i> Valley oak	The valley oak occurs in rich loam valleys and slopes below 2000 feet, and is associated with foothill woodland and valley grassland communities in the Central Valley and its borders and in the inner and middle coast ranges. The species is threatened by loss of habitat to urbanization and agriculture. Regeneration is also a problem.	None	None	Previously CNPS List 4, but dropped in most recent listing

Special Status Plants and Animals Which May Occur in the Planning Area

SPECIES	SPECIES NOTES	STATUS		
		Federal	State	Other
<i>Ranunculus lobbii</i> <i>Loebs's aquatic buttercup</i>	Found in valley and foothill grasslands and oak woodland. It is known to occur on Mount Burdell.	None	None	CNPS 4
<i>Ribes divaricatum</i> var. <i>publiflorum</i> Parish's gooseberry	This species occurs in broadleaved upland forest and north coast forest communities.	None	None	CNPS 4
<i>Ribes victoris</i> Victor's gooseberry	Victor's gooseberry occurs on wooded slopes in shaded canyons, in broadleaved upland forest and chaparral communities.	None	None	CNPS 4
<i>Streptanthus batrachopus</i> Tamalpais jewelflower	This species is found in chaparral and closed-cone forests below 2,000 feet.	FC2	None	CNPS 1B
<i>Streptanthus glandulosus</i> ssp. <i>pulchellus</i> Mt. Tamalpais jewelflower	This species is found in chaparral and valley grassland.	FC3c	None	CNPS 1B
<i>Stylocline amphibloa</i> Mt. Diablo cottonweed	This species is found in shallow soil in rocky places, in broadleaved upland forest communities.	None	None	CNPS 4
<i>Trifolium amoenum</i> Showy Indian clover	The showy Indian clover occurs in low, rich fields and swales. Habitat for this species has been lost to urbanization and agriculture.	FC2	None	CNPS 1A
<i>Trifolium grayi</i> Gray's clover	Species occurs in meadows.	None	None	CNPS 3
Fish				
<i>Eucyclogobius newberryi</i> Tidewater goby	The tidewater goby occurs in brackish water habitats along the California coast, from Agua Hedionda Lagoon in San Diego County to the mouth of the Smith River. The species is found in shallow lagoons and lower stream reaches. The species requires fairly still			
	but not stagnant water, with high oxygen levels. An individual of this species was observed in Novato Creek at the Highway 101 crossing south of Novato in 1945. It is possible that the species has been extirpated, but more information is needed to adequately assess existing population levels and endangerment.	FC2	None	CSC
Reptiles and Amphibians				
<i>Ambystoma tigrinum californiense</i> California tiger salamander	Breed and lay eggs in vernal pools. Open grassland habitats at elevations of less than 1,000 feet. Requires large numbers of rodent burrows and other subterranean refugia.	C2	None	CSC
<i>Clemmys marmorata marmorata</i> Western pond turtle	Preferred habitats include ponds, marshes, rivers, and irrigation ditches with rocky or muddy bottoms. Food is mainly aquatic plants, insects, and carrion.	C2	None	CSC
<i>Rana aurora draytoni</i> California red-legged frog	This frog grows from 2 to 5 inches in length, is brown to reddish in coloring above, with small dark flecks and larger blotches, and usually has a dark mask bordered by pale upper jaw stripe. The groin is coarsely mottled with black on a reddish or yellowish ground color, and usually has red on the lower belly and undersides of the legs. This frog also has well-developed dorsolateral folds. Habitat for the species is moist woods, forest clearings, stream border vegetation, and grassland. This frog seeks quiet permanent water where dense shore growth provides good cover.	FC2	None	CSC

Table 9 (continued)
Special Status Plants and Animals Which May Occur in the Planning Area

SPECIES	SPECIES NOTES	STATUS		
		Federal	State	Other
<i>Scaphiopus hammondi hammondi</i> Western spadefoot toad	Occurs primarily in grasslands but occasionally found in hardwood woodlands.	2R	None	CSC
Birds				
<i>Accipiter cooperii</i> Cooper's hawk	Cooper's hawks are winter, spring, and summer residents. They favor woodland edges and riparian areas for foraging and nesting. They feed on avian prey which is abundant in these habitats. Known breeding sites on Big Rock Ridge	None	None	CSC (breeding sites)
<i>Accipiter striatus</i> Sharp-shinned hawk	Favored habitats include woodland edges and riparian forests which are used for foraging and nesting.	None	None	CSC (breeding sites)
<i>Agelaius tricolor</i> Tricolored blackbird	Typically occurs near fresh water, especially marsh areas. Preferred nesting sites are areas with heavy growth of cattails and bulrushes. Agricultural fields provide foraging habitat. No probable or possible breeding sites within the Novato Planning Area are identified in the Breeding Bird Atlas.	FC2	CPT	None
<i>Aquila chrysaetos</i> Golden eagle	This species is found in rolling foothills or coast range terrain where open grassland turns to scattered oaks or other large trees. Golden eagles have been spotted on Mount Burdell. The Breeding Bird Atlas cites known and probable nest sites in the Novato Planning Area.	None	None	CSC (breeding 7 wintering sites)
<i>Ardea herodias</i> Great blue heron	Great blue herons are colonial nesters in tall trees, cliffsides, and sequestered spots on marshes. Rookery sites are located in close proximity to foraging areas such as marshes, lake margins, tide-flats, rivers and streams, and wet meadows. A nesting colony of great blue herons has been reported to the CDFG NDDB from a stand of live oaks and madrone approximately 3 kilometers east-southeast of the Marin Civic Center, along N. San Pedro Road and San Pablo Bay. The Breeding Bird Atlas identifies a number of possible breeding sites in the Novato area.	None	None	* (rookery sites)
<i>Asio flammeus</i> Short-eared owl	Species occurs in grasslands and fresh water and salt marshes. No known or possible breeding sites reported in Breeding Bird Atlas.	None	None	CSC
<i>Athene cunicularia</i> (burrow sites) Burrowing owl	The burrowing owl occurs in open, dry, nearly or quite level grasslands, prairies, and desert floors. The owl is a subterranean nester, dependent upon large burrowing mammals, most notably the California ground squirrel. A colony of at least 3 owls were observed in 1984 east of the St. Vincent School, approximately one mile south of Hamilton Air Force Base on the east side of Highway 101 and one owl was sighted near the north margin of the airfield runway at Hamilton. No known or possible breeding sites are reported in the Breeding Bird Atlas.	None	None	CSC (burrow site)
<i>Circus cyaneus</i> Northern harrier	A year-round resident in California, it is typically found in lowland marshlands. It also occurs in pastures, edges of orchards, croplands, and grassland habitats. Probable nesting sites west of Highway 101 and south of Highway 37; possible sites to the north of Highway 37.	None	None	CSC (breeding sites)

Special Status Plants and Animals Which May Occur in the Planning Area

SPECIES	SPECIES NOTES	STATUS		
		Federal	State	Other
<i>Elanus caeruleus</i> Black-shouldered kite	The black shouldered kite occurs in low rolling foothills and valley margins with scattered oaks, and in river bottomlands or marshes adjacent to deciduous woodlands. The kite forages in open grasslands, meadows, or marshes located close to isolated, dense-topped trees which are required for nesting and perching. A black shouldered kite was observed in 1973 approximately 0.5 miles northwest of Novato. The Breeding Bird Atlas notes a number of known and probable nest sites in the Novato Planning Area.	None	None	*
<i>Falco columbarius</i> Merlin	The merlin prefers open woodlands. No breeding sites are known for the Novato Area according to the Breeding Bird Atlas.	None	None	CSC
<i>Falco peregrinus anatum</i> American peregrine falcon	Peregrines forage on pigeons, shorebirds, and songbirds. Coastal and inland marsh and riparian habitat are important. In Marin Co., the falcon nests along the coast.	FE	CE	None
<i>Geothlypis trichas sinuosa</i> Salt marsh yellowthroat	The salt marsh yellowthroat nests in freshwater marshes in the spring and summer, and moves into adjacent salt marshes in the winter. Dispersal of the species occurs along tidal sloughs and channels. Reported observation of this species in the vicinity of the Planning Area include sightings along the Petaluma River east southeast of Petaluma, the Petaluma Marsh and Black John Slough, southeast of Petaluma, and near Ammo Hill on Hamilton.	FC2	None	None
<i>Laterallus jamaicensis coturniculus</i> California black rail	The California black rail primarily inhabits salt marshes bordering larger bays. The California black rail is a secretive bird found in tidal salt marsh habitats heavily grown to pickleweed, and in fresh-water and brackish marshes, all at low elevations. The species winters in salt marshes bordering the San Francisco Bay, and has been observed in the Novato Creek, Petaluma River, Gallinas Creek and Day Island marshes. Filling and draining of coastal and inland wetlands threatens vital habitat for this species.	FC1	CT	None
<i>Melospiza melodia samuelis</i> San Pablo song sparrow	Reported southwest of Ammo Hill at Hamilton. The Breeding Bird Atlas reports breeding populations in the Petaluma Marsh area.	FC2	None	CSC
<i>Numenius americanus</i> Long billed curlew	Not known to nest in California, but is a winter migrant foraging in marshlands and agricultural fields.	FC2	None	None
<i>Pandion haliaetus</i> Osprey	Occurs in association with large, fish-bearing waters such as lakes, rivers, ponds, and bays. Observed hunting on bay near Novato. The Breeding Bird Atlas reports possible breeding sites in the Novato area.	None	None	CSC
<i>Progne subis</i> Purple martin	This species inhabits woodlands and low elevation coniferous forests. No known or possible breeding sites are reported in the Breeding Bird Atlas.	None	None	CSC

Table 9 (continued)
Special Status Plants and Animals Which May Occur in the Planning Area

SPECIES	SPECIES NOTES	STATUS		
		Federal	State	Other
<i>Rallus longirostris obsoletus</i> California clapper rail	The California clapper rail is resident in salt-water marshes traversed by tidal sloughs in the vicinity of the San Francisco Bay. The species is associated with abundant growths of cordgrass, pickleweed, and salt grass, but feeds out from cover on mollusks obtained from mud-bottomed sloughs. Food items include mussels, clams and crabs. The clapper rail is known to be present in Marin County from the Corte Madera area north to the Petaluma River in suitable habitat. They occur in marshes along the bay as well as the cordgrass marshes which line the banks of Corte Madera, Miller, San Rafael, Gallinas, and Novato Creeks. The species also occurs in small numbers along the Novato Creek upstream to the vicinity of Highway 37 bridge (Gill, 1979; Berg-Revoir Corp., 1987). The California clapper rail is threatened by marsh reclamation, industrial pollution, and the introduced old-world rat.	FE	CE	None
<i>Antrozous pallidus</i> Pallid bat	Prefers rocky outcrops with access to open habitats for hunting. Will roost in old buildings such as occur at Hamilton.	None	None	CSC
<i>Eumops perotis californicus</i> California mastiff bat	Species will roost in buildings.	FC2	None	CSC
<i>Plecotus townsendii townsendii</i> Townsend's western big-eared bat	Inhabits coastal conifer and broad leaf forests, oak and conifer woodlands, and grasslands. Needs water.	None	None	CSC
<i>Reithrodontomys raviventris</i> Salt marsh harvest mouse	The preferred habitat of the salt marsh harvest mouse is pickleweed dominated salt marsh with complete (100%) plant cover, foliage height of 30 to 50 cm, and pickleweed forming 60% or more of the plant cover with alkali heath and fathen forming a high percentage of the remaining cover. The presence of dense vegetation immediately adjacent to the marsh, preferably a high marsh zone of peripheral halophytes, is important as escape cover during high tides. The mouse is also present in diked areas which support pickleweed where similar habitat conditions are present. The salt marsh harvest mouse requires approximately five acres minimum of pickleweed salt marsh (Shellhammer, 1980, 1982; EarthMetrics, 1984). The northern subspecies of the salt marsh harvest mouse is present in the San Pablo Bay area. The species is known to occur in the Petaluma marsh, on the west bank of the Petaluma River from 2 miles south of Petaluma to Black Point. Salt marsh harvest mice have also been captured at the mouth of Las Gallinas Creek adjacent to McInnis Park and at Bahia.	FE	CE	None
Invertebrates				
<i>Adela oplerella</i> Opler's longhorn moth	Found in serpentine grasslands in Marin County.	FC2R	None	None
<i>Calicina diminua</i> Marin blind harvestman	Associated with serpentine grasslands.	FC2R	None	None
<i>Danaus plexippus</i> Monarch butterfly	This butterfly has winter roost sites along the coast including at China Camp State Park.	None	None	* (wintering sites)

Special Status Plants and Animals Which May Occur in the Planning Area

SPECIES	SPECIES NOTES	STATUS		
		Federal	State	Other
<i>Euphydryas editha bayensis</i> Bay checkerspot butterfly	This species is restricted to native grasslands on outcrops of serpentine. It formerly occurred in Marin County.	FT	None	None
<i>Hydrochara rickseckeri</i> Ricksecker's water scavenger beetle	Found in pinds, seeps, and pooling water in sluggish streams. Has been collected in Marin County	FC2	None	None
<i>Ischnura gemina</i> San Francisco forktail damselfly	Inhabits small, shallow ponds, marshes, and man-made canals in Marin County.	FC2	None	None
<i>Proceratium californicum</i> Valley oak ant	Occurs in leaf litter beneath valley oak.	FC2	None	None
<i>Speyeria callippe callippe</i> <i>Callippe silverspot butterfly</i>	Occupies grasslands where primary food sources are Johnny-jump-up for larval stage and mule ears for adult stage.	C2	None	None
<i>Syncaris pacifica</i> California freshwater shrimp	Occurs in shallow pools away from main stream flow in winter. Lives in exposed roots in summer. Occurs in creeks in Marin County.	FE	CE	None
<i>Tryonia imitator</i> California brackishwater snail	The California brackishwater snail inhabits coastal lagoons and salt marshes from Sonoma County south to San Diego County. The species lives subtidally, and inhabits a variety of sediment types. The species is able to withstand a wide range of salinity. The snail was observed in the Petaluma River Marsh, approximately 5 miles south of Petaluma in 1984.	FC2	None	None

FE: Listed as Endangered by the Federal Government

CE: Listed as Endangered by the State of California

CT: Listed as Threatened by the State of California

CPT: Species proposed as Threatened

Rare: Although not presently threatened with extinction, it occurs in such small numbers throughout its range that it may become endangered if its present environment worsens.

FC1: Category 1 Candidate for Federal listing (Taxa for which the USFWS has sufficient biological information to support a proposed listing).

FC2: Category 2 Candidate for Federal listing (Taxa for which existing information indicates may warrant listing, but for which substantial biological information to support a proposed rule is lacking).

FC3c: Plants previously considered candidates but which were found to be too widespread or not threatened at this time.

CNPS 1B: CNPS listing which indicates plant is rare or endangered in California and elsewhere.

CNPS 3: CNPS list of plants about which more information is needed.

CNPS 4: CNPS list of plant with limited distribution - a watch list.

CSC: California Department of Fish and Game "Species of Special Concern."

*Included on the California Department of Fish and Game list of "Special Animals".

Sources: California Natural Diversity Data Base
California Native Plant Society Inventory of Rare, Threatened, and Endangered Vascular Plants

B. Potential Impacts and Mitigations

Future development that could occur under the Draft General Plan could eliminate or impact important biotic habitat and populations. The major issues associated with biotic impacts include impacts on: (1) riparian habitat; (2) wetland habitat; (3) impacts on diked baylands; (4) oak woodlands, especially valley oaks; (5) sensitive species populations; (6) general loss of wildlife habitat.

Criteria Used to Determine Significance

A project will have a significant impact if it:

1. Damages the habitat of, displaces, or kills Special Status plant or animal species. Special status species are defined as species meeting *CEQA Guidelines* Section 15180 criteria as rare, endangered, or threatened and those of other public concern. These categories include:
 - a. Plants and animals that are listed or proposed for listing as rare, threatened, or endangered under the California Endangered Species Act or federal Endangered Species Act.
 - b. Plants or animals that are Candidates (Category 1 or 2) for possible future listing as threatened or endangered under the federal Endangered Species Act.
 - c. Plants included on Lists 1A, 1B, or 2 of the California Native Plant Society's (CNPS) *Inventory of Rare and Endangered Vascular Plants of California* (Smith and Berg, 1988). CDFG recognizes that Lists 1A, 1B, and 2 of the CNPS inventory contains plants that, in the majority of cases, would qualify for state listing, and CDFG requests their inclusion in EIRs.
 - d. Animals designated by the CDFG as "species of special concern."
 - e. Animals that have been designated as "Protected" or "Fully Protected" by the federal government under law (e.g., Bald Eagle Protection Act).
2. Degrades or eliminates wetlands or riparian habitat. For purposes of this EIR, all wetlands classified as marine, estuarine, palustrine, riverine, and lacustrine in the USFWS *Atlas of National Wetlands Inventory Maps for Marin County, California* (April, 1991) are classified as wetlands.
3. Interferes substantially with the movement of any resident or migratory fish or wildlife species.

Impact 4.3-A **Future development could result in the injury or death of Special Status Species and/or destruction of habitat required by these species.**

Figure 8 shows known locations of Special Status Species. Most of these locations are on lands already protected as open space or on bay wetlands with little to no development potential. In addition, it is likely that there are other populations of Special Status Species which have not yet been discovered or precisely mapped (e.g., refer to the known breeding sites of Special Status Species reported in *The Marin County Breeding Bird Atlas*, Shuford, 1993). The habitats most likely to support these sensitive species include riparian habitat, wetlands, diked baylands, oak/hardwood woodlands, and habitat with serpentine soils. Development on locations supporting these species could result in the injury or death of sensitive animal and plant species. Development could remove habitat required for the continued existence of these species. Loss of habitat or displacement of these species would be significant adverse impacts. A review of the Major Development Sites shown on Figure 3 indicates that known populations of Special Status Species potentially occur at least on Sites 6, 7, 29, 33, 34, 36, and 40. These sites total over 2,000 acres and have development potential for about 625 new residential units and 1,300,000 square feet of non-residential development.

Development may destroy habitat required by Special Status wildlife species for nesting, roosting, and foraging. Many of the sensitive species are dependent on wetland and riparian habitats which are generally protected under the Draft Plan. However, species requiring open grasslands, upland buffers to wetlands, and oak woodlands for their habitat needs will be impacted by future development.

Development is already restricted in many critical habitat areas. The existing General Plan allows little development in the area that was once San Francisco Bay. All development is subject to CEQA review, and CEQA review requires analysis and mitigation of impacts on sensitive biotic species and their habitat.

Mitigation Measures Proposed by the Draft General Plan

The Environment Chapter of the Draft General Plan contain numerous policies and programs aimed at protecting populations of Special Status Species and the habitat those species require. These policies and programs reduce the cumulative impact on Special Status species to a level that is less than significant. Some of these policies and programs are listed below.

EN Objective 1. Preserve, protect, and enhance streams and other bodies of water.

Streams and other water bodies are shown on EN Map 1. Areas next to streams contain environmental resources that are important to the ecology of the area, such as plants and animals that require a riparian habitat, scenic and open space values, and wildlife corridors. These areas are easily damaged by water pollution and construction activity, and therefore careful control of development is necessary.

EN Policy 1 Ecology of Creeks and Streams. Preserve and enhance the ecology of creeks and streams.

EN Program 1.1: Establish a Watercourse Protection Overlay Zone for watercourses shown on EN Map 1. The width of the overlay zone will consist of the watercourse itself between the tops of the banks (existing height) and a strip of land extending 50 feet laterally outward from the top of each bank. Include provisions to extend the boundary of the Watercourse Protection Overlay Zone where critical habitat areas and

riparian vegetation exist. Establish standards and require a permit for any excavation, filling, or grading; removal or planting of vegetation (except for removal of exotic, invasive plants); construction, alteration, or removal of any structure; or alteration of any embankment that is proposed in a Watercourse Protection Overlay Zone. Permits shall include mitigations to protect native vegetation and wildlife, and shall take into account aesthetic, scenic, environmental, and recreational impacts or benefits.

There are a number of other programs listed under this policy which restrict development in this critical habitat. Subsequent policies call for minimizing soil erosion, restoring damaged riparian habitat, and protecting water quality. Access to streams will be considered so long as it does not adversely affect wildlife habitat (EN Program 5.1) All these programs will benefit sensitive biotic species by preserving and protecting riparian habitat.

EN Objective 2: Preserve, protect, and enhance wetlands.

EN Policy 9: Definition of Wetlands. Use the U. S. Fish and Wildlife definition of wetlands, which is land that is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. Wetlands must have at least one of the following attributes: (1) at least periodically, the land supports predominantly hydrophytes; (2) the substrate is predominantly undrained hydric soil; or (3) the substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season of each year.

EN Policy 10 Wetlands Ecology. Preserve and enhance wetlands ecology.

EN Program 10.1: Establish a Wetlands Protection Overlay Zone for wetlands as defined in EN Policy 9. Include provisions to extend the boundary of the Wetlands Protection Overlay Zone where critical habitat areas (including uplands) and riparian vegetation exist. Establish standards and require a permit for any excavation, filling, or grading; removal or planting of vegetation (except for removal of exotic, invasive plants); construction, alteration, or removal of any structure; or alteration of any embankment that is proposed in a Wetland Protection Overlay Zone. Permits shall include mitigations to protect native vegetation and wildlife, and shall take into account aesthetic, scenic, environmental, and recreational benefits.

EN Program 10.2: Require development plans to avoid wetlands to the maximum extent feasible. If development is permitted within wetlands, require mitigation to provide wetland habitat of the same type as the lost habitat, equal to or greater than existing conditions. Require off-site mitigation of wetlands impacts in cases where on-site mitigation is not possible. Off-site mitigation sites should be as close to the project site as possible.

EN Objective 3: Preserve, protect, and enhance bayfront areas.

EN Map 2: Bayfront Areas, shows the historic shore of San Pablo Bay. Areas near the Bay include wetlands, habitat areas for endangered plant and animal species, streams, and lands that are at risk for damage from flooding and earthquakes. Careful regulation of development is necessary to protect environmental resources and minimize the effects of natural hazards. Many diked historic bayland areas are used for agriculture.

EN Policy 11 Bayfront Overlay Zone. Establish a Bayfront Overlay Zone to preserve and enhance natural and historic resources, including wildlife and aquatic habitats, tidal marshes, seasonal marshes, lagoons, wetlands, agricultural lands and low-lying grasslands overlaying historic marshlands.

EN Program 11.1: Revise the Zoning Ordinance to include a Bayfront Overlay Zone consisting of bayfront areas as shown on EN Map 2, excluding land that has been legally filled or developed. Permit uses in accordance with the underlying General Plan designation and Zoning District that are consistent with the other specific regulations pertaining to the Overlay Zone.

EN Policy 12 Bayfront Area Protection. Regulate development in the Bayfront Overlay Zone so that it does not encroach into wetlands or sensitive wildlife habitats, provided that this regulation does not completely prevent use of a property. Discourage human activity that damages fisheries, or habitat for birds, fish or other wildlife.

Public access is limited so as not to adversely affect wildlife habitat (EN Policy 16). Limitations on development in the Bayfront Zone will benefit Special Status Species populations.

EN Objective 4: Preserve, protect, and enhance wildlife habitat.

Protecting the diversity of plant and animal species is important to the environmental health of the community. The Novato area contains important habitat areas and wildlife corridors in hillsides, along streams, and along the Bay.

EN Policy 18 Protect Species Diversity and Habitat. Consider the impact of proposed development on the biological resources that are necessary to maintain a diversity of animal species.

EN Program 18.1: Develop standards and mitigations to help ensure protection of native plant and animal species and their habitat, including the preservation and enhancement of wildlife corridors and edge habitats.

EN Policy 19 Special Status Species. Cooperate with State and Federal Agencies to ensure that development does not substantially affect special status species appearing on any State or Federal list for any rare, endangered, or threatened species.

These policies, especially EN Policy 19, ensure substantial protection for sensitive wildlife species. A Land Use Chapter policy, Land Use Policy 9, defines the Constraints Analysis mentioned above. This Constraints Analysis is pivotal in the discussion of many impacts. The text is reproduced below.

Constraints Analysis

This General Plan establishes constraints analysis as a key part of the development process for many properties in Novato. The analysis is required for all parcels having resources identified on the resource maps in the Environment Chapter, and for parcels they adjoin. Because of the extent and the mix of natural resources in the Planning Area, the precise development potential of individual properties cannot be determined solely by the Land Use Designations Map. The results of the Constraints Analysis followed by sensitive project

design, consistency with General Plan, Zoning Ordinance, and other land use regulations, as well as City review will ultimately determine attainable development density.

This Plan's requirements for Constraints Analysis is consistent with the California Environmental Quality Act (CEQA) because it requires developers to take into account the potential for adverse impacts on the environment when planning their projects. The information developed as part of Constraints Analysis will be incorporated into environmental documents when applicable.

LU Objective 3 Assure that development recognizes environmental constraints.

LU Policy 9 Constraints Analysis. Require assessment of environmental constraints prior to submittal of applications for development of lands with high environmental value so that information compiled during the analysis can be used during project design, review and construction.

LU Program 9.1: Require development applications for land which: (1) includes any of the environmental resources listed below, or (2) is adjacent to environmentally sensitive areas as shown on EN Maps 1, 2, and 3, to include a Constraints Analysis of the entire property. The analysis must locate and evaluate, at a level of detail sufficient to determine environmental protection needs and guide project design, the following resources and constraints:

- 1. Wetlands, watercourses and related lands*
- 2. Habitat used by special species*
- 3. Native woodlands*
- 4. Scenic resources mapped on EN Map 3, including hills and ridgelines.*
- 5. Unstable slopes*
- 6. Fire Hazards*
- 7. Flood Hazards*

Development applications shall identify how the Constraints Analysis was used to avoid and/or mitigate impacts of significant resources.

LU Program 9.2: Conduct staff review of proposed development projects for which Constraints Analyses have been prepared by analyzing the proposed project relative to General Plan policies for each resource analyzed. Relevant policies are found in the following parts of the General Plan:

- 1. Wetlands, watercourses, and related lands (policies associated with EN Objective 1 and EN Objective 2 and related policies and programs)*
 - a. streams, creeks and other watercourses (EN Objective 1 and related policies and programs)*
 - b. wetlands, vernal pools and springs (EN Objective 1 and related policies and programs)*
 - c. bayfront areas (EN Objective 2 and related policies and programs)*
 - d. tidal areas (EN Policy 12)*
- 2. Habitat used by special species (EN Objective 3 and related policies and programs)*
- 3. Scenic Resources (EN Objective 6 and related policies and programs)*

4. *Native woodlands (EN Objective 5 and related policies and programs)*
5. *Unstable slopes (SF Objective 2 and related policies and programs)*
6. *Fire Hazards (SF Objective 5 and related policy and program)*
7. *Flood Hazards (SF Objective 3 and related policies and programs)*

There are also policies aimed at protecting woodlands (EN Policies 23-26) and hillsides and ridgelines (EN Policy 27). All these policies and their attendant programs will preserve sensitive habitat and minimize effects on Special Status Species. These policies are reflected in the Land Use Designations Map which incorporates the Watercourse Protection Overlay Zone, the Wetlands Protection Overlay Zone, and the Bayfront Overlay Zone. The Land Use Designations Map limits development on the most critical habitat types (e.g., riparian habitat, ridgelines, wetlands, and historic baylands).

These policies and programs reduce the cumulative impact on Special Status Species to a level that is less than significant with one exception. The definition of Special Status Species presented in Environment Chapter Policy 19 includes only species that are State or Federal rare, endangered, or threatened species. This does not provide adequate protection to a number of other species that are defined as Special Status Species in this EIR (see the previous section on Criteria Used to Determine Significance). As such, plants and animals that are Candidates for listing by the Federal government, animals that are "species of special concern" as identified by CDFG, and plants on Lists 1A, 1B, or 2 of the CNPS *Inventory of Rare and Endangered Vascular Plants of California* are not afforded protection under EN Policy 19. Future development could potentially significantly impact these plants and animals. This would be a significant cumulative impact.

Additional Mitigation Measures Suggested

The policies and programs incorporated into the Draft General Plan provide strong protection for Special Status Species and the habitat they require. Future development per the Draft Plan will retain large acreages of undeveloped or lightly developed land that will support these species into the future. The one exception is the potential impact on a number of Special Status Species, as described above. This impact can be mitigated to a level that is less than significant by expanding the definition of Special Status Species in Environment Chapter Policy 19 to include all species defined as Special Status Species under No. 1 in the Criteria Used to Determine Significance at the beginning of this impact section (note: the definition should state plants on Lists 1A, 1B, or 2 of the most current CNPS Inventory).

Given this addition, the Draft Plan policies and programs decrease the potential cumulative impact on these species to a level that is less than significant. No additional mitigation measures are required at a program level. Site-specific impacts must be assessed on a site-by-site basis. CEQA requirements along with the policies and programs included in the Draft General Plan provide the necessary guidelines to ensure that there will not be substantial impact to Special Status Species nor the habitat they require.

To further decrease possible impacts, it is recommended that in the requirements for the Constraints Analysis (Land Use Program 9.1) that the City specify that serpentine outcrops and soils be specifically noted as a potentially sensitive habitat. Such outcrops and soils should be identified in the Constraints Analysis, thoroughly assessed for Special Status Species, and avoided if Special Status Species occur.

Impact 4.3-B Future development could reduce the number of trees in Novato, especially the acreage of Oak woodland.

Oak woodland provides important habitat for a number of wildlife species, including certain Special Status Species. The cutting of trees in these woodlands would result in a permanent loss of important plant and wildlife habitat. Cutting could result in the loss of a number of Heritage Trees. Finally, cutting would result in the loss of trees that have intrinsic environmental value. These are all potentially significant impacts. A number of the properties where future development could occur support Oak or Oak/hardwood tree stands. For example, portions of Sites 2, 6-9, 11-15, 18, 21, 25, 27, 32, 35, 38, and 40 (shown on Figure 3) contain Oak woodlands; these sites total over 1,900 acres. As many as 1,600 new residential units and 1,600,000 square feet of non-residential development could be built on these sites (though large portions of several of these sites do not include native woodlands). It is likely that future development proposals could include requests to remove some undetermined number of these trees. For example, the proposed Renaissance Golf Links project (on Site 21), if approved as originally proposed, would result in the loss of over 5,000 trees over 6 inches in diameter.

The City Code includes guidelines on removing mature trees when developing property (Chapter 5-23.011 and 5.27.008). In addition, the City Code has an entire chapter (Chapter 17 - Trees and Shrubs) regulating the removal of trees over 6 inches in diameter (measured 24 inches from the ground). However, these guidelines do not specifically require that trees be preserved.

Removal of a substantial number of Oaks or other trees so that the integrity of the woodland stand is threatened would be a significant adverse impact.

Mitigation Measures Proposed by the Draft General Plan

The Environment Chapter contains numerous policies and programs aimed at preserving native woodlands. These policies and programs reduce the cumulative effect to a level that is less than significant; the policies and programs provide the required framework to allow the City to regulate specific developments so that site-specific impacts are also less than significant. Many of these policies were listed above under Impact 4.3-A. They include policies to protect riparian corridors, hillsides, and ridgelines. This Chapter also contains specific policies directed towards preserving woodlands. These policies are listed below.

EN Objective 6: Preserve, protect, and enhance native woodland areas.

EN Policy 23 Protect Native Woodlands: Maintain age and species diversity of native woodlands, and preserve the health of trees and other vegetation wherever feasible.

EN Program 23.1: Require replacement of native trees/woodland when projects result in the loss of woodland habitat.

EN Policy 24 Trees on Public Land. Protect native woodlands and significant trees on public lands by planting additional trees needed to maintain age and species diversity, ensuring the proper and timely pruning of trees, and removing non-native species, particularly if they are invasive.

EN Program 24.1: Consider adopting a Tree Management Program, establishing varieties, size and spacing requirements, maintenance standards, and priority planting schedules.

EN Policy 25 Trees on Private Property: Encourage, and, where appropriate, require actions by private property owners to protect the health of native woodlands and trees.

EN Program 25.1: Continue requiring the planting of trees in parking lots to provide shade and visual screening. Encourage the removal of non-native trees.

EN Program 25.2: Develop educational programs to inform property owners of good tree management practices.

EN Program 25.3: Consider adopting the recommendations of the Novato Tree Advisory Task Force, including possible amendments to the City's Heritage Tree Ordinance and a new Community Forest, Trees and Shrubs Ordinance.

EN Policy 26 Trees in New Development: Require that the site planning, construction and maintenance of development preserve existing healthy trees and native vegetation on site to the maximum extent feasible.

EN Program 26.1: Consider amending the City's Zoning Ordinance and other development regulations to improve policies for tree planting, maintenance, and replacement.

Land Use Policy 9 establishes the requirement that a Constraints Analysis be prepared for projects located on sites with native woodlands.

EN Program 25.3 recommends adoption of the Novato Tree Advisory Committee's recommendations. The Novato Tree Advisory Task Force's recommendations are on file with the City Community Development Department; the recommendations include 88 pages of text. The recommendations include specific recommendations to 1) establish and maintain maximum tree cover on public lands; 2) maintain trees and shrubs in a healthy condition through good cultural practices; 3) establish and maintain an optimal level of age and species diversity; 4) promote conservation of tree resources; 5) as well as several other recommendations regarding maintenance and management. These objectives are all incorporated in a Draft Trees and Shrubs Ordinance. The draft ordinance also contains a policy to promote wildlife habitat and ecological restoration. The ordinance contains detailed discussions of how these objectives and policies will be carried out, planting requirements, enforcement proceedings, etc.

Additional Mitigation Measures Suggested

The policies and programs in the Draft General Plan provide the framework to ensure the long-term viability of Novato's woodland resources. Cumulatively, the impact is less than significant. It is recognized that several of these policies state that woodlands will be protected to the degree "feasible." While this is not a clear statement that woodlands will be protected from significant impact, it is concluded that EN Policy 26 which refers to new development (and the woodland habitat that would be most affected) requires avoidance of trees to "the maximum extent feasible." In addition, the Constraints Analysis requires development applications to avoid or mitigate impacts to significant resources, and native woodlands are identified as one of the resources to be addressed in the Constraints Analysis. It is concluded that the Draft Plan provides overall protection for significant oak woodlands. Additional mitigation measures are not required.

The required Constraints Analysis, CEQA review, and the amendment of the City's Tree Ordinance will provide the basis for ensuring that site-specific impacts on woodlands can be mitigated.

It is further recommended that the City may wish to modify Environment Chapter Policy 26 to state that significant oak woodlands will be protected, even if the intensity of development on the site must be reduced to a level less than allowed as a maximum on the Land Use Designations Plan.

Impact 4.3-C Future development may displace wetlands.

The loss of wetlands is currently a concern for the entire nation. Novato contains much of the remaining undeveloped wetlands in the North Bay. As discussed in the Setting Section, these wetlands provide necessary habitat for a wide variety of birds and other animals. Most of the area east of Highway 101 contains wetlands (including diked baylands, which are considered wetlands given the definition of wetlands in the Draft General Plan). Development of these bayland wetlands or other wetlands in Novato would be considered a significant adverse impact.

The historic bay line is shown in Figure 9. The Bayfront Overlay Zone described in the Draft General Plan includes lands within this historic bay line that are east of Highway 101 and which have not been legally filled to an elevation above the historic bay elevation. Figure 9 is a schematic representation of the historic bay line. More detailed maps are on file with the Novato Community Development Department. These maps were prepared by BCDC. The San Francisco Estuary Institute is in the process of developing more refined maps of the historic bay line. When this new mapping is completed, it should be used to determine which properties are within the historic bay line.

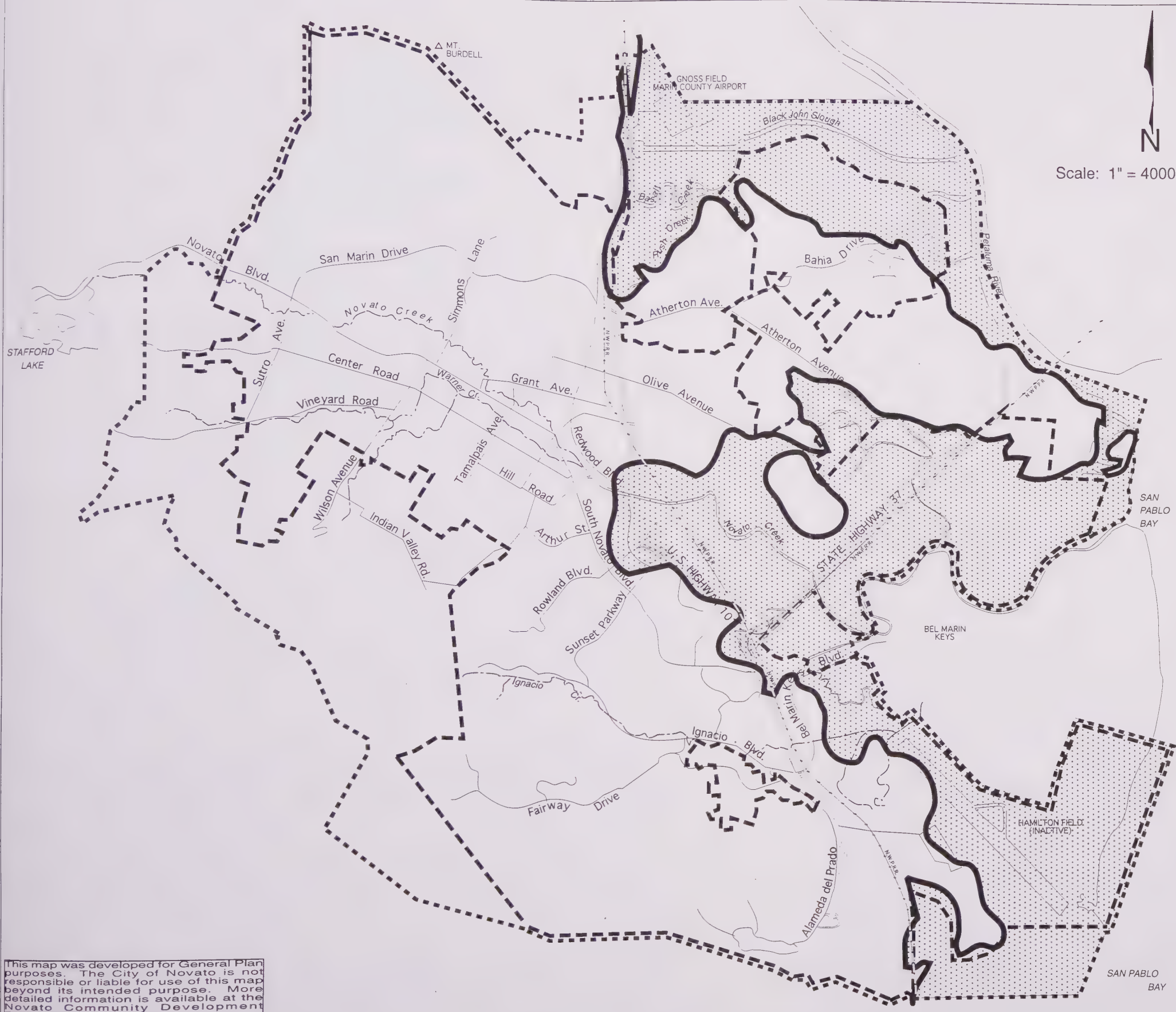
The existing General Plan likewise recognized the environmental value of these wetlands and bay plains. It designated most of this area Conservation which limited residential development. The Draft General Plan contains numerous policies and programs aimed at preserving wetlands within what is defined as the Wetlands Protection Overlay Zone and the Bayfront Overlay Zone. A review of the Land Use Designations Map shows that wetlands east of Highway 101 are designated generally for Conservation or Open Space. There are several exceptions as described below.

The Draft General Plan contains a recommendation to consider constructing a new road between the north end of Hamilton Drive and Highway 37 (via Marsh Drive). The northern portion of this extension would require construction within mapped wetlands of the Wetlands Protection Overlay Zone and the Bayfront Overlay Zone. Assuming the route for this road extension borders the railroad, the amount of wetland that would be affected is minimal when compared to other potential routes. The wetland that would be filled would be the western edge of a large undeveloped area. Nevertheless, because filling of wetland would be required, and possible mitigations are not known at this time, it is concluded that construction of this road would have significant environmental impacts on wetlands and the biotic community supported by those wetlands.

The area through which this road would travel (an area east of the railroad tracks and north of the PG&E substation) is designated Public Utilities with a maximum FAR of 0.25. Much of the area with this designation includes wetlands within the Bayfront Overlay Zone.

FIGURE 9

HISTORIC BAY SHORELINE



Historic Bay

Denotes areas that were historically marsh or open water. Certain properties have been filled to be above the historic water level. Detailed mapping of remaining wetlands (including marine, estuarine, riverine, lacustrine, and palustrine wetlands) is contained in the *Atlas of National Wetlands Inventory Maps for Marin County* on file with Novato Community Development Department.

NOTE: The information presented in this map is schematic only. More detailed maps with this information are on file at the Community Development Department

SOURCE: Nichols and Wright, 1971

City of Novato General Plan Revision
Draft
Environmental Report

----- City Limit Line
..... Sphere Of Influence

Revised & Recirculated
November, 1995

This map was developed for General Plan purposes. The City of Novato is not responsible or liable for use of this map beyond its intended purpose. More detailed information is available at the Novato Community Development Department.

Site 21 includes some wetlands and it has development potential for 85 homes (however, previous applications have not included homes in the wetland portions of the site). Site 23 is within the bay line; it would be permitted to have 108,900 square feet of non-residential development. It is unclear whether this site has been legally filled to be above the historic bay elevation.

In addition to these sites, there are numerous small wetlands located in many areas west of Highway 101. Development of these sites could adversely affect wetlands. Loss of any wetlands is considered a potentially significant adverse impact.

Mitigation Measures Proposed by the Draft General Plan

The Draft General Plan defines wetlands in the following manner:

EN Policy 9: Definition of Wetlands. Use the U. S. Fish and Wildlife definition of wetlands, which is land that is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. Wetlands must have at least one of the following attributes: (1) at least periodically, the land supports predominantly hydrophytes; (2) the substrate is predominantly undrained hydric soil; or (3) the substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season of each year.

The Draft Plan includes policies and programs aimed at conserving wetland resources. These policies and programs are described below.

EN Objective 2: Preserve, protect, and enhance wetlands.

EN Policy 10 Wetlands Ecology. Preserve and enhance wetlands ecology.

EN Program 10.1: Establish a Wetlands Protection Overlay Zone for wetlands as defined in EN Policy 9. Include provisions to extend the boundary of the Wetlands Protection Overlay Zone where critical habitat areas (including uplands) and riparian vegetation exist. Establish standards and require a permit for any excavation, filling, or grading; removal or planting of vegetation (except for removal of exotic, invasive plants); construction, alteration, or removal of any structure; or alteration of any embankment that is proposed in a Wetland Protection Overlay Zone. Permits shall include mitigations to protect native vegetation and wildlife, and shall take into account aesthetic, scenic, environmental, and recreational benefits.

EN Program 10.2: Require development plans to avoid wetlands to the maximum extent feasible. If development is permitted within wetlands, require mitigation to provide wetland habitat of the same type as the lost habitat, equal to or greater than existing conditions. Require off-site mitigation of wetlands impacts in cases where on-site mitigation is not possible. Off-site mitigation sites should be as close to the project site as possible.

EN Program 10.3: Encourage wetlands restoration where appropriate.

In addition to policies and programs related to wetlands, the Environment Chapter also provides protections for areas formerly part of San Francisco Bay, as described below.

EN Objective 3: Preserve, protect, and enhance bayfront areas.

EN Map 2: Bayfront Areas, shows the historic shore of San Pablo Bay. Areas near the Bay include wetlands, habitat areas for endangered plant and animal species, streams, and lands that are at risk for damage from flooding and earthquakes. Careful regulation of development is necessary to protect environmental resources and minimize the effects of natural hazards. Many diked historic bayland areas are used for agriculture.

EN Policy 11 Bayfront Overlay Zone. Establish a Bayfront Overlay Zone to preserve and enhance natural and historic resources, including wildlife and aquatic habitats, tidal marshes, seasonal marshes, lagoons, wetlands, agricultural lands and low-lying grasslands overlaying historic marshlands.

EN Program 11.1: Revise the Zoning Ordinance to include a Bayfront Overlay Zone consisting of bayfront areas as shown on EN Map 2, excluding land that has been legally filled or developed. Permit uses in accordance with the underlying General Plan designation and Zoning District that are consistent with the other specific regulations pertaining to the Overlay Zone.

EN Policy 12 Bayfront Area Protection. Regulate development in the Bayfront Overlay Zone so that it does not encroach into wetlands or sensitive wildlife habitats, provided that this regulation does not completely prevent use of a property. Discourage human activity that damages fisheries, or habitat for birds, fish or other wildlife.

EN Policy 13 Views. Encourage protection of visual access to the San Pablo Bay Shoreline and the Petaluma River. EN Map 3, Scenic Resources.

EN Program 13.1: Establish design guidelines for the Bayfront Overlay Zone. Consider guidelines for signs, and protection of views, and requiring design review for all development in the area.

EN Policy 14 Tidal Areas. Cooperate with State and Federal agencies to ensure that areas subject to tidal action remain in their natural state.

EN Policy 15 Agriculture in Bayfront Areas. Encourage the continuation of agricultural uses in Bayfront areas that do not adversely affect wetlands or sensitive wildlife habitats and do not damage fish habitat.

EN Program 15.1: Work with the County to establish programs that will encourage agriculture that does not degrade the environment along the bayfront or cause pollution of Bay waters.

EN Policy 16 Public Access and Water-oriented Uses. Encourage public access to shoreline areas, consistent with wildlife and habitat protection and safety considerations. Allow water-oriented uses such as public access, docks and piers, and low-intensity recreational and educational activities which provide or protect wetland or wildlife habitat, and which do not require diking, filling, or dredging. Encourage restoration to tidal status and seasonal wetlands. Allow use of shoreline areas for flood basins, and wastewater reclamation.

Where feasible, the City will accept dedicated public access easements, to be improved and maintained by the City, provided City funds are available. These easements should separate public access from habitat areas. The design of paths and viewpoints should minimize conflicts between public and private uses.

EN Policy 17 Inter-Agency Coordination. Facilitate coordination and consultation with other agencies with jurisdiction over the bay in the review of development and conservation proposals in the Bayfront Overlay Zone.

EN Program 17.1: Provide information to applicants about agencies with jurisdiction over bayfront lands.

In addition to these policies and programs aimed at protecting wetlands within the Wetlands Protection Overlay Zone and the Bayfront Overlay Zone, the Draft General Plan contains policies and programs to protect riparian zones (EN Policies 1-8 of the Environment Chapter). A Constraints Analysis is required for projects that include wetlands (see the Land Use Chapter Policy 9).

The policies and programs cited above are reflected in the Land Use Designations Map which allows very little development on lands within the Bayfront Overlay Zone. Much of this land is already owned by various public agencies (as shown on Figure 22 of this EIR). Remaining lands that have not already been developed or that have not been legally filled are mainly designated Conservation.

Additional Mitigation Measures Suggested

The policies and programs outlined above basically ensure that there will not be a substantial loss of wetlands in Novato. However, the policies and programs do not mitigate cumulative wetland impacts to a level that is less than significant. The following additional measures are required to ensure adequate mitigation of this cumulative impact.

1. To ensure no loss of wetlands in the area between Bel Marin Keys industrial area and Highway 37, the recommended mitigation is to designate this land that is within the Bayfront Overlay Zone as Conservation. This land use designation shall apply to all lands within the Bayfront Overlay Zone that have not already been developed or legally filled above the historic bay elevation.
2. Add a program to EN Policy 12 that states that development in the Bayfront Overlay Zone shall provide a 100-foot buffer between wetlands and the development, wherever feasible. This provides a necessary buffer to protect wetland habitat.

These additional mitigation measures will reduce cumulative impacts to a level that is less than significant except for the construction of the Bel Marin Keys connector road. This proposed road connection would result in loss of wetlands. This is considered a significant impact for which no mitigation under the Draft General Plan can be determined at this time

Impact 4.3-D **New development will generate erosion and increase runoff from impermeable surfaces which will result in increased pollution of aquatic habitats.**

Future development may generate soil erosion. Eroded materials may be transported to waterways and wetlands and adversely affect the aquatic habitat. Increased runoff from developed sites can increase peak flows in waterways and/or extend the duration of those peak flows. These increased flows can result in bank slumping and sedimentation of receiving waterways. This will adversely affect the aquatic habitat of those waterways. These impacts would all be considered to be significant.

Mitigation Measures Proposed by the Draft General Plan

See the previous discussion under Impact 4.1-E regarding this same impact and mitigation measures recommended to satisfactorily reduce erosion impacts.

Additional Mitigation Measures Suggested

No additional mitigation measures are required as the policies and programs in the Draft General Plan adequately address the erosion issue.

Impact 4.3-E New development may create barriers to animal movement and dispersal.

Future development can create man-made barriers to animal migration routes and travel routes between nesting, roosting, or escape habitat and forage habitat. Particularly important travel routes are along watercourses and ridgelines. Creating barriers along major travel routes or isolating a woodland or wetland habitat as an "island" would be considered a significant impact. A review of Figure 3 shows a number of Major Development Sites that include major ridgelines. For example, Sites 2, 6, 7, 9, 12-15, 25, and 40 all contain portions of major ridgelines. These sites total 1,000 acres and have development potential for about 800 new residential units and 1,300,000 square feet of non-residential development. In addition, Sites 3, 5, 16, 22, 29, 33, 35, and 36 border streams which are travel corridors.

Mitigation Measures Proposed by the Draft General Plan

The Draft General Plan calls for restricting development along watercourses (EN Policies 1-8 of the Environment Chapter), and watercourses provide important travel corridors for wildlife. EN Policy 27 of the Environment Chapter calls for protecting visual values on hillsides and ridgelines. This policy recommends consideration of an ordinance to protect hillsides and ridgelines. The Draft Plan considers access to streams and watercourses so long as it does not adversely affect wildlife habitat. Finally, the Draft General Plan provides land use designations, policies, and programs that will result in large blocks of undeveloped land that can provide home territories for many wildlife species. Even at buildout, about half the area within the City Sphere of Influence will remain undeveloped. Development per the Draft General Plan will not result in the creation of new "islands" of habitat that are cut off from larger tracts of wildlands.

EN Policy 18 of the Environment Chapter includes language to preserve and enhance wildlife corridors in new development. Specifically, it states:

EN Objective 4: Preserve, protect, and enhance wildlife habitat.

Protecting the diversity of plant and animal species is important to the environmental health of the community. The Novato area contains important habitat areas and wildlife corridors in hillsides, along streams, and along the Bay.

EN Policy 18 Protect Species Diversity and Habitat. Consider the impact of proposed development on biological resources that are necessary to maintain a diversity of animal species.

Program 18.1: Develop standards and mitigations to help ensure protection of native plant and animal species and their habitat, including the preservation and enhancement of wildlife corridors and edge habitats.

These policies and programs reduce this cumulative impact to a level that is less than significant. Again site-specific impacts must be assessed as part of a project's Constraints Analysis and/or as part of the CEQA review.

Additional Mitigation Measures Suggested

While the policies and programs of the Environment Chapter reduce potential impacts on wildlife travel and migration, the impact remains potentially significant. There is no guarantee in these policies that significant ridgelines will remain undeveloped so as to allow travel routes. Blocking these ridgeline routes with new development could result in isolated habitat islands with consequent impacts on wildlife. This cumulative impact shall be mitigated by adding the following:

1. Add the following program to Environment Policy 27: This program will add protection for ridgelines which act as critical wildlife travel corridors.

EN Program 27.3 Prohibit development within 100 vertical feet of a designated ridgeline within a scenic area and from protruding above a designated ridgeline as seen from a public right-of-way one-eighth of a mile or more away, unless this would prevent all development on a property.

2. Add wildlife travel corridors to the list of resources in LU Program 9.1.

Impact 4.3-F Future development may introduce new species.

Introduction of new species will occur when development occurs on previously undeveloped sites. The removal of the natural vegetation can provide habitat for aggressive, non-native species such as species of broom and non-native pines. This potential introduction of aggressive species is particularly important where development sites adjoin parks or open space.

Future landscaping will include plantings of non-native trees, shrubs, herbs, and groundcover. Again, so long as the plantings are not near open space, the effect is minimal though certain species such as broom can spread long distances. The loss of native vegetation and its replacement with typical suburban/urban landscaping will reduce the

amount of foraging available to certain wildlife species. This is a potentially significant impact.

Mitigation Measures Proposed by the Draft General Plan

The Environment Chapter of the Draft General Plan contains several policies and programs that address aggressive non-native plant species. These include:

EN Policy 2 Protect Native Vegetation. Protect native vegetation in watercourse areas.

EN Program 2.1: Require mitigation for loss of riparian vegetation. On-site mitigation is preferred wherever possible.

EN Program 2.2: Discourage planting of exotic vegetation in the Novato Area.

EN Program 2.3: Develop educational programs to inform property owners about protecting native vegetation in the watercourse area.

EN Policy 5 Habitat Restoration. Encourage restoration of damaged portions of riparian areas to their natural state, wherever feasible.

Additional Mitigation Measures Suggested

These policies generally address the impact but do not provide specific direction for ensuring that aggressive plant species are not planted in new development. This remains a potentially significant impact. This impact can be mitigated by adding the following program to Land Use Policy 9 in the Land Use Chapter.

1. All development proposals that are required to prepare a Constraints Analysis shall include standards or conditions that ensure that species of broom, acacia, and pampas grass will not be planted as part of any future development of the site.

This addition will reduce the cumulative impact from new development to a level that is less than significant. No additional mitigation measures are required.

However, to address existing problems, the City should consider the following:

1. It is recommended that the City actively encourage nursery operators to not sell species of broom or pampas grass. At the least, nursery operators should be requested to provide people who buy plants of these species with a handout explaining the invasive nature of these plants and the effects of these invasions on native plants and animals. This could be added as a program under Policy 2 in the Environment Chapter.
2. A second program to be added under LU Policy 9 would be that the City will actively pursue elimination of all plants of the species of broom, acacia, and pampas grass on City properties. The City will not plant these species on City-owned lands. The City will encourage other public landowners to likewise institute a program to not plant these species and eliminate existing populations.

Impact 4.3-G Future development will result in the displacement of populations of plants and wildlife.

Development will replace native vegetation with impermeable surfaces and landscaping. Various wildlife populations will be displaced due to the loss of habitat. While new residential and commercial landscaping will provide new habitat, this habitat will not be used by species requiring oak woodlands, open grasslands, oak savanna, and/or large undeveloped areas. There will be a general loss of biotic diversity in the area. This is a potentially significant impact. A review of the Major Development Sites shown on Figure 3 indicates that many of these sites are large sites that currently support undeveloped biotic habitat. For example, development of Sites 8, 9, 18, 21, 22, 29, 33, 34, and 38 east of Highway 101 and Sites 2, 6, 11-15, 25, 27, 32, and 40 west of Highway 101 will eliminate large areas of biotic habitat. These sites total about 3,100 acres and have development potential for up to 1,600 new residential units and 2,000,000 square feet of non-residential development.

Previous sections discussed potential impacts and mitigations for Special Status Species, oak woodlands, wetlands, and wildlife travel routes. There remains the overall impact of a general loss of biotic habitat and plant and animal populations. Many of the properties with development potential consist of large areas of undeveloped biotic habitat, particularly hillsides and ridges with oak and hardwood woodlands and savanna. Wetlands are generally protected by the policies and programs of the Draft Plan.

Mitigation Measures Proposed by the Draft General Plan

The mitigations incorporated into the EIR as listed above for the other biotic impacts will minimize habitat and biotic populations that are eliminated. It is noted that some of the more important sites have been designated as Conservation or Open Space in the Draft General Plan, thereby preserving much to most of the habitat on these sites (for example, Sites 22, 29, 32, 33, 34, and 36). Nevertheless, development necessarily displaces habitat, animals, and plants. This effect must be accepted if any future development is allowed. At buildout, over half the area within the Sphere of Influence will remain undeveloped and will continue to provide habitat to support plants and animals common to Novato. Other policies, programs, and mitigations recommended in this EIR will maintain travel corridors so that major "islands" of habitat are not created. New development will be clustered to maintain habitat. Woodlands will be protected to the maximum extent feasible. Riparian and wetland habitats will be protected. Given these protections, the cumulative impact is not considered significant. Site-specific effects will be addressed by the Constraints Analysis as well as CEQA review for each development.

Additional Mitigation Measures Suggested

No additional mitigation measures are required.

4.4 CULTURAL RESOURCES

A. Setting

The *Existing Conditions Report* (Chapter 8) contains a detailed description of archaeological and historic resources existing in Novato plus historical background information. The reader is directed to that report.

"Cultural resources" is a generic term used to describe prehistoric, historic, and archaeological resources. "Historic properties" are cultural resources that are determined to be eligible for listing in the National Register of Historic Places. The *Existing Conditions Report* lists three properties on the National Register of Historic Places and an additional 13 properties eligible for such listing. There is also one property that is a California Historic Landmark and 28 properties recognized for their historical importance by the State Office of Historic Preservation. In 1977, the City established an Historic Preservation Zoning District. There are 44 sites within this district. The zoning provides guidelines for construction, repair, alteration, and demolition of historic structures within the district.

Novato is a sensitive area from an archaeological perspective. The area was inhabited by the Coast Miwok peoples at the time of European contact. Miwok villages were adjacent to shore, lagoon or slough, but when summer arrived, attention shifted to the hills for hunting and for gathering of vegetable products. Within the Planning Area there are 86 recorded prehistoric archaeological sites. These archaeological sites have been recorded on terraces adjacent to watercourses, at the base of hills where watercourses enter the valley floor, on mid-slope terraces and ridgetops, and along historical marsh margins. Recorded sites within the Planning Area include habitation, burial, resources procurement, camp, and petroglyph sites. There is a high probability of additional, as yet unrecorded, prehistoric archaeological sites within unsurveyed portions of the Planning Area.

The *Existing Conditions Report* lists the various Federal, State, and City regulations that guide development on sites with historic and archaeological resources. Section 7 of Chapter 4 of the City Code ("Cultural Resources") currently prohibits excavating, defacing, or disturbing any archaeological resource; the section proceeds to describe the process required for identifying and protecting archaeological resources on development sites in the City.

B. Potential Impacts

Criteria Used to Determine Significance

A project will have a significant impact if it:

1. Destroys or disturbs cultural resources. Destroys or disrupts a prehistoric or historic site.
2. Destroys or alters buildings of historical significance. Destroys or disrupts a property of historic or cultural significance to a community or an ethnic or social group.

Impact 4.4-A **Future development in the City has the potential to adversely affect areas of archaeological or historical importance.**

Future development could adversely affect cultural resources. This would be a significant impact. The existing Federal, State, and City ordinances, policies, and programs ensure that significant cultural resources are preserved or protected. The Draft General Plan also includes policies to protect these resources.

Mitigation Measures Proposed by the Draft General Plan

The Community Identity Chapter includes the following policies and programs:

CI Objective 11 Preserve archaeological and historic resources.

CI Policy 29 Historic Buildings, Sites and Districts. Identify, recognize and protect sites, buildings, structures and districts with significant cultural, aesthetic and social characteristics which are part of Novato's heritage.

CI Program 29.1: Adopt a Cultural Resources Management Ordinance to define, identify, evaluate, protect and preserve sites, buildings, structures, districts and objects that reflect significant elements of Novato's cultural, social, economic, political, aesthetic and architectural heritage.

CI Program 29.2: Publish and distribute historic information about Novato.

CI Program 29.3: Consider establishing incentives for preservation and restoration of historic buildings and sites.

Additional Mitigation Measures Suggested

These policies and programs do not specifically mention archaeological resources other than in the title of Objective 11. While it is recognized that archaeological resources are assessed and provided considerable protection under CEQA, the City's General Plan should contain a specific policy addressing these important resources. As such, the Draft Plan does not adequately mitigate potential impacts to archaeological resources. It is recommended that the following policy be added under Objective 11

Policy x Archaeological Resource Protection. Continue to protect archaeological resources.

Program x: Require all major development applications to be reviewed for potential archaeological resources. Identified resources shall be protected as determined by professional archaeologists

This addition will adequately reduce cumulative impacts to a level that is less than significant. However, to facilitate future planning, the City may wish to develop an archaeological sensitivity map that identifies not only known resources but areas that need to be investigated as part of the CEQA review for a development application.

4.5 TRANSPORTATION AND CIRCULATION

This section was prepared under separate contract by Whitlock & Weinberger Transportation, Inc., consulting traffic engineers. These consultants were asked to assess impacts of the Draft Plan as compared to impacts from buildout under the existing General Plan as well as a second alternative (called Alternative 2 in this EIR). Their complete report, *General Plan Revision Transportation Background Report #3: Evaluation of the Preferred Plan and Alternatives*, is incorporated herein by reference and is on file with the Novato Community Development Department. The subsequent Impact Section is divided into two parts: 1) a discussion of the impacts for the Draft Plan, and 2) a discussion of the impacts for two of the Plan alternatives. Because the traffic analysis tends to be complex and confusing, it was decided to present the traffic analysis of alternatives here rather than in the subsequent section on Project Alternatives so that the reader would not be forced to flip back and forth between different parts of this EIR when comparing traffic impacts.

By way of introduction, Table 10 shows the buildout projections used for assessing impacts from the Draft Plan and the two alternatives. As this table shows, the Draft Plan increases morning (A.M.) peak hour trip volumes by 37 percent (as compared to 47 percent for buildout under the existing General Plan [Alternative 1 in this EIR] and 34 percent for buildout under Alternative 2) and increases afternoon (P.M.) peak hour trip volumes by 39 percent (as compared to 47 percent for the existing General Plan and 32 percent for Alternative 2).

Table 10
Alternative Comparison

	<u>Existing Conditions</u>	<u>Draft Plan</u>	<u>Existing General Plan</u>	<u>Alternative 2</u>
Residential	21,044 units	26,686 units	27,311 units	26,055 units
% increase	—	27%	30%	24%
Non - Residential	7,481,694 sf	13,223,788 sf	14,919,599 sf	11,866,131 sf
% increase	—	77%	99%	59%
A.M. Peak	19,600 trips	26,800 trips	28,800 trips	26,300 trips
% increase	—	37%	47%	34%
P.M. Peak	33,100 trips	45,900 trips	48,700 trips	43,800 trips
% increase	—	39%	47%	32%

A. Setting

Methodology

Study Intersections

In consultation with City staff, a total of 24 intersections were identified for inclusion in this analysis; 17 signalized, six with all-way stop controls, and one unsignalized or two-way stop controlled intersection. The study intersections are shown in Figure 10. They are as follows:

(The numbers used below are the same numbers used on Figure 10).

Signalized Intersections

1. Redwood Boulevard/Rowland Boulevard
2. U.S. 101 South Ramps/Rowland Boulevard
3. U.S. 101 North Ramps/Rowland Boulevard
4. Wilson Avenue/Novato Boulevard
5. Simmons Lane/Novato Boulevard
6. Grant Avenue/Novato Boulevard
7. 7th Street/Tamalpais Avenue/Novato Boulevard
8. Diablo Avenue/Novato Boulevard/South Novato Boulevard
9. Redwood Boulevard/Diablo Avenue/DeLong Avenue
10. South Novato Boulevard/Rowland Boulevard
11. U.S. 101 South Ramps/Ignacio Boulevard/Enfrente Road
12. U.S. 101 North Ramps/Bel Marin Keys Boulevard/Nave Drive
13. U.S. 101 South Ramps/DeLong Avenue
14. U.S. 101 North Ramps/DeLong Avenue
15. Redwood Boulevard/San Marin Drive
16. U.S. 101 South Ramps/San Marin Drive
17. U.S. 101 North Ramps/Atherton Avenue
23. 7th Street/Grant Avenue

All-way Stop Controlled

18. Novato Boulevard/San Marin Drive/Sutro Avenue
19. South Novato Boulevard/Sunset Parkway
20. Sunset Parkway/Ignacio Boulevard
21. Redwood Boulevard/Olive Avenue
22. Diablo Avenue/Center Road

Uncontrolled

24. Atherton Avenue/Bugeia Lane

Study Periods

The a.m. and p.m. peak hour periods were analyzed. These are the periods when traffic is most congested and provide a worst case analysis of the circulation system.

Level of Service Methodologies and Standards

The complete traffic report on file with the City describes in detail the Level of Service Methodologies used in the analysis. Different methodologies are used depending on whether an intersection is controlled by a signal or some series of stop signs. Intersection Level of Service (LOS) is used to rank traffic operation based on traffic volumes and capacity using letter designations ranging from A to F. Generally, Level of Service A represents free flow conditions and Level of Service F represents forced flow or breakdown conditions. The LOS designation is generally accompanied by a unit of measure which indicates either a level of delay or volume-to-capacity ratio. The currently accepted standard for level of service in the City of Novato is LOS D.

Traffic Signal Warrants

The complete traffic report describes how the need for new traffic signals was evaluated using Caltrans Traffic Warrant #11, Peak Hour Volume.

Existing Conditions

Existing conditions represent traffic volume and operations conditions which were present in 1993. Under Existing Conditions, 23 of the 24 study intersections are operating acceptably at LOS D or better during both peak periods. The all-way stop controlled intersection of Redwood Boulevard/Olive Avenue is operating unacceptably at LOS E during the p.m. peak period. In order to mitigate this deficient level of service, a traffic signal should be installed. By installing a traffic signal at this location, operation could be improved to LOS C during the a.m. peak period and LOS D during the p.m. peak period. Based on the Peak Hour Volume Warrant, a traffic signal appears to be warranted for the volumes present during both the a.m. and p.m. peak hours.

Road segment volumes under Existing Conditions are shown in Figure 11. The level of service calculations for Existing Conditions are summarized in Table 11; the complete calculations are included in the Traffic Report on file with the City.

Background Issues

Preventing Freeway Bypass Traffic

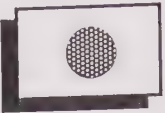
For years Novato has felt the effects of the congestion on U.S. 101. Traffic used to divert onto Redwood Boulevard, South Novato Boulevard, Sunset Parkway, Ignacio Boulevard and Alameda del Prado. With the new High Occupancy Vehicle (HOV) lanes, these overflow effects have subsided to some degree. However, as the population of Sonoma County and Novato continue to grow, and as commute patterns change to increase counter-flow traffic, Novato should be prepared to implement innovative measures to prevent impacts on its own street system.

The Role of Transit

As the U.S. 101 corridor becomes more congested, transit will need to play a larger role in transportation to and from, as well as within, Novato. What General Plan policies should be included to guide Novato's representatives to the U.S. 101 Corridor Committee and the Congestion Management Agency as plans for transit improvements are made? How can

FIGURE 10

STUDY AREA
INTERSECTIONS



Study Intersection



SOURCE: Whitlock & Weinberger
Transportation, Inc.

City of Novato General Plan Revision
Administrative Draft
Environmental Report


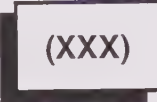
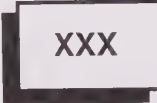
Revised & Recirculated
November, 1995

This map was developed for General Plan purposes. The City of Novato is not responsible or liable for use of this map beyond its intended purpose. More detailed information is available at the Novato Community Development Department.

FIGURE 11

EXISTING TRAFFIC VOLUMES



-  Study Intersection
-  AM Peak Hour Traffic
-  PM Peak Hour Traffic

SOURCE: Whitlock & Weinberger
Transportation, Inc.

City of Novato General Plan Revision
Draft
Environmental Report

Revised & Recirculated
November, 1995

Novato keep its options open in the event it becomes possible to locate a rail station in or near the downtown area?

Existing public transit is shown on Figure 12.2 in the *Existing Conditions Report*.

Plans and Policies

Marin County is subject to a statewide initiative passed in June, 1990, which increased funding for the state's transportation system and established the Congestion Management Program (CMP). Section 65089(a) of the California Government Code states that every county that includes an urbanized area must adopt a CMP, and Section 65088 defines urbanized areas as having a population of over 50,000 residents. Pertinent aspects of the City's General Plan will need to be in compliance with the County of Marin's CMP.

A CMP is defined as a countywide program that will be updated biannually to address congestion problems in a coordinated and cooperative manner with other agencies. It is designed to monitor traffic conditions on a designated network of transportation facilities and develop policies to tie together land use and transportation decisions. CMPs are comprised of the following five elements.

1. A component defining the CMP transportation system and LOS standards for the highway and roadway portions of the system.
2. A public transportation system standards element
3. A transportation demand management and trip reduction component
4. A program for analyzing the impacts of land use decisions
5. A seven-year capital improvement program.

Within the City of Novato there are six facilities which have been designated as part of the CMP system. They are as follows.

1. U.S. 101
2. S.R. 37
3. Bel Marin Keys Boulevard from U.S. 101 South Ramps to Arroyo San Jose
4. Novato Boulevard from Sutro Avenue/San Marin Drive to Diablo Avenue
5. South Novato Boulevard from Diablo Avenue to U.S. 101
6. Rowland Boulevard from South Novato Boulevard to U.S. 101

The non-freeway roadways are subject to a LOS D standard, while the minimum standard for a freeway is LOS E. Those segments which were already operating at LOS F when the CMP was begun were then "grandfathered" in at the lower LOS level. U.S. 101 through Novato was grandfathered in at LOS F.

If a monitored road segment falls below the CMP level of service standards, the responsible jurisdiction is obligated to prepare a deficiency plan which may be comprised either of measures and a schedule for implementation to achieve the accepted standard, or a specific list of improvements, programs or actions which will measurably improve the overall level of service on the designated system and contribute significant improvements to local air quality.

Table 11
Summary of Intersection Level of Service Calculations

Intersection Approach	Existing Conditions				Existing General Plan Conditions				Preferred Plan				Second Plan Alternative			
	A.M. Peak		P.M. Peak		A.M. Peak		P.M. Peak		A.M. Peak		P.M. Peak		A.M. Peak		P.M. Peak	
	R.C. ¹ - Delay ²	LOS	R.C. ¹ - Delay ²	LOS	R.C. ¹ - Delay ²	LOS	R.C. ¹ - Delay ²	LOS	R.C. ¹ - Delay ²	LOS	R.C. ¹ - Delay ²	LOS	R.C. ¹ - Delay ²	LOS	R.C. ¹ - Delay ²	LOS
Signalized Intersection (LOS is related to Delay)																
1. Redwood Blvd/Rowland Blvd	15.9	C	16.9	C	17.2	C	19.3	C	16.1	C	20.0	C	15.4	C	18.7	C
2. US 101 SB Ramps/Rowland Blvd	12.4	B	10.1	B	12.6	B	12.8	B	13.3	B	12.5	B	12.0	B	11.2	B
3. US 101 NB Ramps/Rowland Blvd	11.2	B	24.0	C	11.5	B	19.5	C	12.3	B	14.5	B	11.1	B	14.2	B
4. Wilson Ave/Novato Blvd	10.5	B	10.1	B	10.2	B	8.8	B	11.7	B	11.3	B	9.8	B	8.6	B
5. Simmons Ln/Novato Blvd	8.8	B	11.3	B	10.5	B	11.5	B	9.0	B	11.4	B	8.9	B	9.8	B
6. Grant Ave/Novato Blvd	11.3	B	12.9	B	11.8	B	10.7	B	11.7	B	14.1	B	11.6	B	10.6	B
7. 7th St/Tamalpais Ave/Novato Blvd	15.0	C	19.2	C	19.6	C	20.9	C	21.9	C	43.0	E	24.7	C	34.5	D
<i>Mitigated Conditions</i>									<i>14.6</i>	<i>B</i>	<i>22.0</i>	<i>C</i>				
8. Diablo Ave/Novato Blvd/So. Novato Blvd	14.1	B	18.2	C	13.2	B	16.5	C	13.3	B	17.4	C	13.3	B	14.8	B
9. Redwood Blvd/Diablo Ave/DeLong Ave	19.0	C	23.7	C	18.7	C	125.9	F	18.4	C	88.9	F	18.0	C	63.0	F
<i>Mitigated Conditions</i>					<i>15.7</i>	<i>C</i>	<i>29.0</i>	<i>D</i>	<i>17.0</i>	<i>C</i>	<i>29.3</i>	<i>D</i>	<i>16.9</i>	<i>C</i>	<i>25.4</i>	<i>D</i>
10. So. Novato Blvd/Rowland Blvd	18.4	C	18.8	C	19.1	C	19.1	C	19.3	C	26.2	D	18.5	C	20.4	C

Intersection Approach	Existing Conditions				Existing General Plan Conditions				Preferred Plan				Second Plan Alternative			
	A.M. Peak		P.M. Peak		A.M. Peak		P.M. Peak		A.M. Peak		P.M. Peak		A.M. Peak		P.M. Peak	
	R.C. ¹ - Delay ²	LOS	R.C. ¹ - Delay ²	LOS	R.C. ¹ - Delay ²	LOS	R.C. ¹ - Delay ²	LOS	R.C. ¹ - Delay ²	LOS	R.C. ¹ - Delay ²	LOS	R.C. ¹ - Delay ²	LOS	R.C. ¹ - Delay ²	LOS
11. US 101 SB Ramps/Ignacio Blvd/ Enfrente Rd <i>Mitigated Conditions</i>	11.8	B	25.7	D	12.2	B	41.8	E	10.1	B	33.0	D	10.4	B	39.2	D
					10.1	B	22.2	C								
12. US 101 NB Ramps/Bel Marin Keys Blvd/Nave Dr <i>Mitigated Conditions</i>	25.7	D	31.8	D	25.4	D	360.3	F	20.5	C	175.6	F	17.6	C	67.4	F
					16.9	C	34.5	D	19.7	C	38.4	D	17.0	C	19.3	C
13. US 101SB Ramps/DeLong Ave	9.9	B	10.8	B	11.6	B	10.0	B	8.6	B	7.6	B	8.1	B	7.3	B
14. US 101 NB Ramps/DeLong Ave <i>Mitigated Conditions</i>	10.0	B	19.0	C	12.2	B	48.8	E	12.0	B	36.6	D	11.6	B	29.2	D
					12.0	B	17.5	C								
15. Redwood Blvd/San Marin Dr <i>Mitigated Conditions</i>	16.0	C	16.3	C	23.7	C	528.2	F	19.4	C	39.7	D	17.1	C	33.0	D
					21.1	C	32.1	D								
16. US 101SB Ramps/San Marin	12.3	B	7.1	B	12.9	B	18.5	C	12.4	B	10.6	B	12.3	B	10.5	B
17. US 101 NB Ramps/Atherton Ave <i>Mitigated Conditions</i>	11.5	B	18.1	C	15.0	C	70.3	F	12.3	B	19.0	C	12.2	B	18.2	C
					12.0	B	22.2	C								
23. 7th Street/Grant Avenue	6.1	B	8.6	B	6.8	B	35.4	D	6.8	B	23.7	C	6.9	B	20.8	C
25. Rowland Blvd./Rowland Way	8.5	B	13.8	B	6.4	B †	10.4	B †	6.4	B †	10.4	B †	6.4	B †	10.4	B †

Intersection Approach	Existing Conditions				Existing General Plan Conditions				Preferred Plan				Second Plan Alternative			
	A.M. Peak		P.M. Peak		A.M. Peak		P.M. Peak		A.M. Peak		P.M. Peak		A.M. Peak		P.M. Peak	
	R.C. ¹ - Delay ²	LOS	R.C. ¹ - Delay ²	LOS	R.C. ¹ - Delay ²	LOS	R.C. ¹ - Delay ²	LOS	R.C. ¹ - Delay ²	LOS	R.C. ¹ - Delay ²	LOS	R.C. ¹ - Delay ²	LOS	R.C. ¹ - Delay ²	LOS
All-Way Stop Controlled Intersections (LOS is related to Delay)																
18. Novato Blvd/San Marin Dr/ Sutro Ave	10.9	C	13.1	C	19.4	C	22.9	D	17.2	C	21.9	D	16.2	C	19.5	C
19. So. Novato Blvd/Sunset Pkwy	12.3	C	5.3	B	52.4	F	28.6	D	41.1	E	25.1	D	34.3	E	18.9	C
<i>Mitigated Conditions</i>					7.3	B	7.4	B	5.6	B	5.7	B	5.5	B	5.5	B
20. Sunset Pkwy/Ignacio Blvd	7.6	B	3.8	A	14.9	C	12.7	C	15.7	C	11.0	C	13.2	C	8.5	B
21. Redwood Blvd/Olive Ave	15.6	C	41.8	E	999+	F	999+	F	214.6	F	999+	F	168.3	F	999+	F
<i>Mitigated Conditions</i>					15.5	C	36.1	D	16.8	C	35.6	D	16.6	C	27.1	D
22. Diablo Ave/Center Rd	10.3	C	12.1	C	16.6	C	19.7	C	16.7	C	20.1	D	18.5	C	19.6	C
Unsignalized Intersection (LOS is related to Reserve Capacity)																
24. Atherton Ave/Bugeia Ln																
SB (Bugeia Ln) Approach	664	A	779	A	-468	F	-769	F	-182	F	-497	F	-119	F	-414	F
EB (Atherton Ave) Left	961	A	822	A	403	A	-243	F	564	A	69	E	592	A	97	E
<i>Mitigated Conditions</i>					17.0	C	37.1	D	18.0	C	25.0	D	16.4	C	21.7	C

Notes:

¹ = Reserve Capacity of the minor movement (for unsignalized intersections)

² = Average Delay in Seconds (for all traffic at signalized intersections and all-way stop controlled intersections)

LOS = Level of Service

NB = northbound

SB = southbound

EB = eastbound

† = Condition includes signal operation modification (southbound right-turn overlap)

Bicycle and Pedestrian Facilities

Bicycle and pedestrian modes of travel are effective in serving the City of Novato. Most of the city is reasonably flat; the weather is mild; and there are relatively short distances between residential areas, parks, schools and commercial centers. The City does take a proactive effort in providing bicycle lanes on major arterials, and sidewalks are included in the street standards. Novato has many opportunities to promote additional cycling and walking travel through General Plan policies which increase residential density downtown, establish mixed uses, and favor infill development.

Existing and proposed bikeways are shown on Figure 12.3 in the *Existing Conditions Report*. Trails are shown on Figure 29.2 of that report.

Circulation Improvements

There are several transportation improvement projects in the Novato Planning area that are either committed projects or are planned for future implementation. They include:

1. Turn lane improvements and traffic signals on Nave Drive as part of Hamilton Field project
2. Ignacio Boulevard/Bel Marin Keys Boulevard interchange improvements
3. Install left turn pockets on Atherton Avenue
4. Widen South Novato Boulevard to four lanes with a median from Diablo Avenue to Rowland Boulevard
5. Interconnect the downtown traffic signals for level of service and air quality improvements

B. Potential Impacts

Criteria Used to Determine Significance

A project will have a significant impact if:

1. It causes increases in traffic volumes that result in intersections operating below the following Levels of Service:
 - a. At Intersections: operation of LOS D for signalized intersections and four-way stop controlled intersections;
 - b. LOS E for all other intersections except for side street operations that have very low traffic volumes where LOS F for those turn operations may be acceptable..
2. It results in a substantial reduction in traffic, bicycle, or pedestrian safety.
3. It causes substantial congestion on Highway 101 and/or Highway 37

Land Use Assumptions

Land use assumptions for the Draft Plan and the two alternatives analyzed in the traffic report were provided by Marjorie W. Macris/PAS & Associates. The land use assumptions used in the analysis are summarized in Table 12.

Table 12
Land Use Assumptions

Land Use	Existing	Draft Plan	Existing General Plan	Alternative 2
Residential (units)	21,044	26,686	27,311	26,055
Commercial (square feet)	6,207,352	9,507,155	9,754,190	8,325,970
Industrial (square feet)	135,549	1,448,278	2,133,654	965,001
Office (square feet)	1,138,793	2,268,355	3,031,755	2,575,160

Circulation Improvements

The Draft Plan includes the following roadway improvements.

1. U.S. 101 - Extend the High Occupancy Vehicle lane (HOV) from its current terminus at S.R. 37 to Atherton Avenue. Extend the lane farther northward when a contiguous HOV lane is developed in Sonoma County. Do not build another interchange in North Novato, but plan improvements to provide better access to Olompali State Park and to provide safe access and egress to and from the Redwood Sanitary Landfill.
2. Northwestern Pacific Railroad Right-of-Way - Retain the right-of-way for public transit use, with the exact mode to be specified in the future. Consider using this right-of-way for a busway or a bike path. It is important to preserve this continuous right-of-way through the County and to plan facilities, in areas such as the old train station based on the assumption of future transit use.
3. Additional Public Transit Services - The City should support development of additional intra-city public transit services, possibly using innovative technology, to connect employment centers such as Fireman's Fund, Downtown, Vintage Oaks, Hamilton, and Bel Marin Keys, using the railroad right-of-way, jitneys and other modes.
4. Bel Marin Keys Industrial Park Connection - Explore a new road extending on the east side of U.S. 101 from Bel Marin Keys Boulevard to S.R. 37 to improve access/egress between Bel Marin Keys Industrial Park and S.R. 37.

As specified in the *Plan Alternative Report*, the following transportation projects are not recommended for inclusion in the Draft Plan:

1. Reichert Avenue Extension - Extending Reichert Avenue from Sweetser Avenue to Vallejo Avenue would destroy the lumber yard, a key component of the commercial/industrial/construction related business area north of Grant Avenue.
2. South Novato Boulevard Overcrossing - This project would increase through traffic on South Novato Boulevard from commuters by-passing U.S. 101.
3. Widening Novato Boulevard (7th Street to Diablo Avenue) - This project would be unnecessarily disruptive to adjacent residential areas.
4. McInnis Parkway - The project would not help solve Novato's traffic problems. The route has been deleted from the Marin Countywide Plan, and may not be required if Novato's *Draft General Plan* reduces the commercial development potential contained in the existing *General Plan*.

Traffic Projections

Future traffic volume projections were determined through a modeling process which included an estimation of trip generation by traffic analysis zone, development of trip distribution assumptions, and assignment of the trips to the street network. Other considerations included traffic growth due to future conditions such as the potential diversion in existing traffic volumes and growth in external trips traveling on Novato city streets. The impact of additional public transit services and passenger rail service were not included in the projections due to their uncertainty and in order to present a worst case LOS analysis. If these improvements are implemented, the level of service may be slightly better than shown in this analysis.

Traffic Analysis Zones

The traffic analysis zones (TAZs) used in the analysis were based on the zone system from the Marin County traffic model. The area included in the City of Novato city limits and sphere of influence were divided into 32 zones. A copy of the zone map is provided in the complete traffic report on file with the City.

Trip Distribution

The trip distribution process determines the destination of travel in terms of percentage from the traffic zone of the trip origin to various destinations. Trip destinations (or "gateways") for the City of Novato trips consisted of:

1. U.S. 101 North
2. U.S. 101 South
3. S.R. 37 East
4. West Marin via Novato Boulevard
5. 16 local Novato neighborhoods and activity centers

The trip distribution assumptions were obtained from *Traffic Model Zone Structure and Trip Distribution Assumptions* (DKS Associates, October 14, 1993). This document determined the trip distribution percentages between the zones and gateways based on area to area trip table data from the Marin County CMA traffic model for the Year 2010. In other words, the trip distribution assumptions used in this analysis are based on factors such as location of jobs within the City of Novato, Marin County and the Bay Area; location of housing in Novato, Marin County, and the Bay Area; and transportation facility

characteristics which impacts travel demand. A summary of the trip distribution assumptions is shown in Table 13.

Travel paths from traffic analysis zones to gateways (and vice versa) were estimated based on the most likely paths drivers would take. This process included consideration of the shortest distance, potential travel time, peak hour congestion on U.S. 101, location of arterials within the City, and traffic engineering judgment. A total of 544 individual paths were used for the analysis.

Table 13
Trip Distribution Assumptions

Origin/ Designation	A.M. Peak Hour		P.M. Peak Hour	
	Residential	Non-Residential	Residential	Non-Residential
Local Novato	65%	40%	70%	55%
U.S. 101 South	25%	15%	22%	14%
U.S. 101 North	7%	35%	6%	25%
S.R. 37 East	2%	8%	1%	5%
West Marin	1%	2%	1%	1%
Total	100 %	100 %	100 %	100 %

Trip Generation

The amount of a.m. and p.m. peak hour vehicular traffic generated by each of the traffic analysis zones was determined by using trip generation rates from *Trip Generation*, 5th Edition, Institute of Transportation Engineers, 1991. This manual is a standard reference used by jurisdictions throughout the country, and is based on actual trip generation studies performed at numerous locations for various types of land uses in areas of various populations. Individual trip rates for residential, commercial, industrial and office were used. The rate for commercial land use varied based on the total square footage of commercial used planned for each particular zone.

A factoring process was used to avoid double counting vehicular trips. Standard trip rates produce vehicular trips which are experienced at the "driveway" of a particular development. Some of these trips may consist of linked trips for other purposes or pass-by trips to other land use. Therefore, based on the trip distribution information, the industrial and office vehicular trips in each zone were reduced by 40 percent because these trips were generated on the residential end. Also, the commercial trips in each zone were reduced by 50 percent to account for pass-by trips, linked trips, and shopping trips which were generated on the residential end of the trip. The residential trip generation estimate was not reduced.

A summary of the new traffic generation that would result from each alternative is provided in Table 14. Detailed calculation tables of the traffic generation by land use zone are provided in the traffic report on file with the City.

Table 14

Trip Generation Summary

Scenario	Estimated Peak Hour Vehicle Trips	
	A.M. Peak Hour	P.M. Peak Hour
Existing Conditions	19,600	33,100
Draft Plan	26,800	45,900
Existing General Plan	28,800	48,700
Alternative 2	26,300	43,800

Other County Growth

The trip assignment process accounted for all traffic growth in the City of Novato that would be generated by either land use growth in the City of Novato or by other areas of the County. Growth in local street traffic would be expected due to development in the unincorporated county, adjacent cities and other counties. The primary corridors for this type of traffic growth consist of the West Marin to U.S. 101 South route via Novato Boulevard and the S.R. 37 East to U.S. 101 North route via Atherton Avenue. Based on existing traffic volumes in these corridors, it was assumed that the external traffic passing through Novato would increase by approximately 50 percent. Other traffic growth generated in unincorporated county, adjacent cities and other counties would be expected on U.S. 101. This growth was determined based on traffic projections determined by the Marin County traffic model.

Diverted Existing Trips

The Draft Plan includes a connection between Bel Marin Keys Boulevard in the Industrial Park area and S.R. 37, east of U.S. 101. The traffic assignment included a diversion of not only future traffic to this connection but a diversion of existing traffic which would utilize the Bel Marin Keys Boulevard to S.R. 37 East route.

1. Draft General Plan Impacts and Mitigations

Under the conditions which are anticipated upon buildout of the Draft General Plan, vehicular trips are anticipated to increase by approximately 38 percent over current levels. These traffic projections were made based on current levels of vehicular use for various types of development. This increase in traffic would be expected to generate the following impacts.

Impact 4.5-A Increased traffic volumes will reduce traffic safety in Novato.

The Draft Plan will increase traffic volumes in the City by about 38 percent. Although increases in traffic volumes do not necessarily translate to a decrease in traffic safety, the potential would exist for an increase in accidents where increased traffic volumes have not been properly addressed through updated signing, striping and channelization. The increased traffic congestion necessarily increases the chances for traffic accidents. A comparison of existing traffic volumes shown on Figure 11 and future buildout traffic

volumes shown on Figure 12 shows substantial increases on most arterials and collectors. For example, afternoon peak hour volumes on several streets are listed below:

1. Olive Avenue east of Highway 101 will increase from 594 vehicles per hour (vph) to 1,398 vph.
2. Atherton Avenue between Highway 101 and Bugeia Lane will increase from 658 vph to 1,853 vph.
3. Novato Boulevard west of Simmons Lane will increase from 979 to 1,451 vph.
4. Sunset Parkway will increase from 425 to 783 vph.

These examples indicate the substantial traffic increase along Novato streets. Again, this increased traffic will increase the chance for accidents. This is a potentially significant impact.

Mitigation Measures Proposed in the Draft General Plan

These potential impacts would be mitigated by the following Draft General Plan Transportation Chapter objectives and policies and their related programs.

TR Objective 5 Develop a circulation system that is safe and efficient.

TR Policy 10 Improve Traffic Safety. Improve the safety of the roadway system.

TR Program 10.1: Periodically analyze the locations of traffic accidents to identify problems and use this information to set priorities for improvements as a part of the City's Capital Improvement Program.

TR Policy 11 Continuation of Streets. Facilitate the continuation of streets and bicycle and pedestrian paths through new developments wherever possible.

TR Program 11.1: Review site plans of developments to facilitate the continuation of streets, bicycle paths, and pedestrian paths to improve local circulation

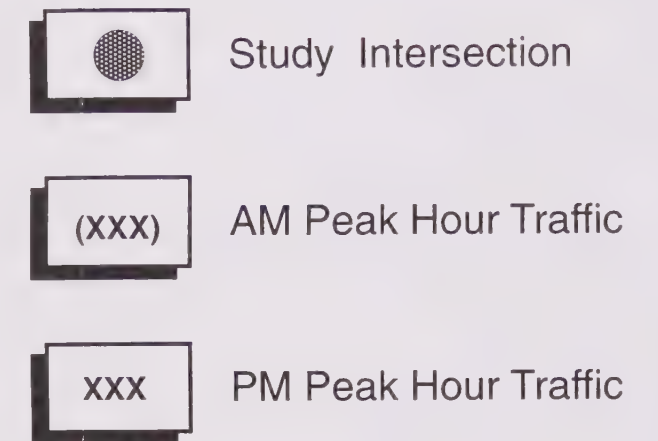
Continuation of existing streets shall be considered with the development of larger parcels located between streets where this will not generate adverse impacts for traffic movement, public safety and the character of the neighborhood. Priority shall be given to providing pedestrian and bicycle routes to connect streets wherever possible.

In addition, other policies aimed at maintaining adequate Levels of Service on City streets and ensuring that transportation facilities are adequate to allow new growth (TR Policies 3 and 4) will reduce this impact.

Additional Mitigation Measures Suggested

The policies and programs included in the Draft General Plan reduce this cumulative impact to an acceptable level. No additional mitigation is required. Individual developments must be assessed on a project-by-project basis to develop appropriate mitigations per these Draft Plan policies and programs to ensure that traffic generated by these developments does not significantly affect local traffic safety.

DRAFT GENERAL PLAN TRAFFIC VOLUMES



City of Novato General Plan Revision Draft Environmental Report

Revised & Recirculated
November, 1995

This map was developed for General Plan purposes. The City of Novato is not responsible or liable for use of this map beyond its intended purpose. More detailed information is available at the Novato Community Development Department.

Impact 4.5-B Increased traffic volumes may impact residential neighborhoods.

The projected increase in traffic volume may impact residential streets through an increase in cut-through traffic bypassing congestion on arterials and main streets by traveling on residential streets. The precise effect on any particular residential street was not measured since only arterials and collectors were assessed in the traffic report. In addition, it is impossible to forecast the volume of bypass traffic on individual streets. In general, this increased traffic on residential streets will increase safety hazards. The increased volumes could alter the residential character of the neighborhoods.

Mitigation Measures Proposed in the Draft General Plan

These potential impacts would be mitigated by the following Draft General Plan Transportation Chapter objectives and policies and their related programs.

TR Objective 4 Ensure that the transportation system contributes to the quality of life of the community.

TR Policy 7 Public Participation and Education in Transportation Decisions. Actively seek public participation in the preparation and review of regional and local transportation plans.

TR Program 7.1: Continue to hold public meetings on proposed transportation plans and improvements.

TR Policy 8 Impacts of Transportation Improvements. When transportation improvements are expected to have negative impacts, seek to reduce them through design changes or mitigation.

TR Program 8.1: Review proposed transportation improvements to ensure that adequate measures will be implemented to reduce any anticipated air quality, noise, visual, and other impacts.

Some proposed transportation improvements require Environmental Impact Reports, while other, smaller projects do not. This program requires that proposed transportation improvement in the City be reviewed for potential negative impacts and that appropriate measures be included to make these less severe.

TR Policy 9 Protect Irreplaceable Resources Design transportation facilities so that irreplaceable resources such as important open space lands, recreational facilities and neighborhood integrity are protected.

TR Program 9.1: Review proposed transportation improvements so that measures will be implemented to protect important open space lands, recreational facilities, and neighborhood integrity.

In addition the policies and program listed under Impacts 4.5-A, 4.5-C, and 4.5-D reduce this impact.

Additional Mitigation Measures Suggested

The policies and programs included in the Draft General Plan reduce this cumulative impact. However, there remains potentially significant impacts from new development on

existing residential streets and neighborhoods. As such, it is recommended that an additional policy and programs be added, as described below:

TR Policy x Through Traffic on Local Streets. Reduce through traffic on local streets to preserve the peace and quiet of residential areas.

TR Program x.1: Adopt and enforce a truck route plan for Novato that limits trucks to arterial and collector streets, specifies weight limitations and fines for non-compliance. Install route signs as required.

TR Program x.2: Develop measures to limit through traffic on residential streets when traffic studies confirm that traffic volumes on such streets exceed the Levels of Service established by the City.

With this addition, the cumulative effect will be reduced to a level that is less than significant. Individual developments must be assessed on a project-by-project basis to develop appropriate mitigations per these Draft Plan policies and programs to ensure that traffic generated by these developments does not significantly affect local residential streets.

Impact 4.5-C Increased traffic volumes will reduce bicycle safety and increase the demand for bikeways.

The projected increase in traffic volume may impact bikeways through a greater demand for these facilities. Increased traffic will result in potential safety impacts.

Mitigation Measures Proposed in the Draft General Plan

These potential impacts would be mitigated by the following Draft General Plan Transportation Chapter objectives and policies and their related programs.

TR Objective 5 Develop a circulation system that is safe and efficient.

TR Policy 10 Improve Traffic Safety. Improve the safety of the roadway system.

TR Program 11.1: Periodically analyze the locations of traffic accidents to identify problems and use this information to set priorities for improvements as a part of the City's Capital Improvement Program.

TR Policy 11 Continuation of Streets. Facilitate the continuation of streets and bicycle and pedestrian paths through new developments wherever possible.

Program 13.1: Review site plans of developments to facilitate the continuation of streets, bicycle paths, and pedestrian paths to improve local circulation

TR Objective 7 Make it easier and safer for people to travel by bicycle and on foot.

TR Policy 18 Comprehensive Bicycle Path System. Establish a comprehensive and safe system of bicycle routes that connects all parts of the City.

TR Program 18.1: Work towards completing the bicycle route system as indicated in TR Map 4.

TR Program 18.2: Incorporate bicycle facilities into the design and construction of roadway improvements.

TR Program 18.3: Continue to participate the Marin Countywide Bicycle Advisory Committee.

TR Program 18.4: Utilize grant funding, and other means, as appropriate, to acquire rights-of-way needed for a comprehensive bike route system, and to provide bike racks and other bicycle-related facilities, as indicated in TR Map 4: Bicycle Route.

TR Program 18.5: Distribute maps of Novato's bicycle routes at public buildings, the library, schools and other public places.

TR Program 18.6: Construct bike routes according to the standards established by Caltran's Planning Development and Design Criteria for Bikeways for the roadway system. Alternative designs may be required in environmentally sensitive areas.

TR Program 18.7: Consider adoption of a Citywide Bicycle Routes Plan based on the recommendations of the City's Bicycle and Pedestrian Advisory Committee.

This plan would specify in more detail and perhaps enlarge upon the bicycle routes indicated in TR Map 4. Caltrans and MTC have adopted criteria for bicycle plans. Adoption of a bicycle routes plan conforming to these criteria makes the City eligible for California Bicycle Lane Act funding grants.

TR Policy 19 Bicycle Parking. Provide adequate bicycle parking at public transit facilities, park-and-ride lots, schools, the library, parks, city offices, and commercial areas, as feasible.

TR Program 19.1: Require new development to provide adequate bicycle parking, as feasible.

Revisions to the parking standards in the Zoning Ordinance are required to implement this program. The Zoning Ordinance should specify the number of bicycle parking spaces required as a ratio of building floor area and the type of bicycle racks and locker designs which should be used. The specifications for bicycle racks should reflect the type of use. Long term parking at bus stops and workplaces would require locker-type storage for bicycle, whereas short term parking at stores would require the simpler locking bicycle racks.

TR Program 19.2: Work with public transit providers to place bicycle parking at bus stops and to increase the number of buses able to take bicycles.

TR Program 19.3: Require employers to provide appropriate facilities to encourage bicycling.

TR Program 19.4: Continue the bicycle safety programs offered by the Police Department.

Additional Mitigation Measures Suggested

The policies and programs included in the Draft General Plan provide a broad framework for expanding bicycle facilities and maintaining bicycle safety. These policies and programs reduce this cumulative impact to an acceptable level. No additional mitigation is required.

Impact 4.5-D Increased traffic volumes will reduce pedestrian safety and increase the demand for pedestrian paths.

The projected increase in traffic volume may impact pedestrian facilities through a greater demand for these facilities and the need to connect areas of Novato by pedestrian paths. The increased traffic poses potential safety impacts to pedestrians.

Mitigation Measures Proposed in the Draft General Plan

These potential impacts would be mitigated by Transportation Chapter Policies 10 and 11 that require a safe and efficient circulation system. The following Draft General Plan Transportation Chapter objectives and policies and their related programs specifically mitigate this impact.

Objective 7 Make it easier and safer for people to travel by bicycle and on foot.

TR Policy 20 Provide Pedestrian Facilities. Create and maintain a safe and convenient pedestrian system.

Program 20.1: Require a sidewalk or shoulder on all streets.

Program 20.2: Continue to provide traffic controls in areas with high volumes of pedestrian movement.

The Community Identity Chapter contains the following policies and programs.

CI Policy 13 Pedestrian Paths. Provide for maximum feasible pedestrian circulation.

CI Program 16.1: Consider adopting the following design guidelines for pedestrian facilities:

- a) provide physical separation of vehicular and pedestrian movement wherever possible and plant street trees to create a safer and more pleasant environment for walkers;*
- b) provide pedestrian-oriented lighting to improve security and the sense of safety;*
- c) require convenient, secure pedestrian access from parking lots and entrances to commercial uses;*
- d) encourage commercial developments to include pedestrian walkways at street level adjacent to buildings, public transit and parking facilities; and*
- e) encourage clustering of commercial buildings to create pedestrian zones and avoid wide expanses of parking between building entrances.*

Additional Mitigation Measures Suggested

The policies and programs included in the Draft General Plan reduce this cumulative impact to an acceptable level. No additional mitigation is required.

Impact 4.5-E Increased traffic volumes will increase congestion on City streets.

With a 38 percent increase in traffic volumes, traffic congestion on City streets will increase proportionally. If the Draft Plan scenario is built out, 6 of the 24 study intersections will operate unacceptably without any mitigation taking place. The remaining 18 intersections are expected to continue to operate acceptably at LOS D or better with their currently existing or planned configurations. Of these, 13 intersections are expected to experience no change or only a minor change to their level of service. As previously noted, there are a number of reasons these intersections do not experience significant impacts. In some cases the increase in traffic volumes is expected to be minor, or the additional traffic contributes primarily to movements which are currently underutilized, so the impact is minimized. Some intersections actually show improvement over the Existing Conditions, primarily due to the transportation improvements which are already planned, and are listed in the "Circulation Improvements" section above, or at signalized intersections with excess capacity when the traffic signal timing is optimized to minimize delay.

Selected road segment volumes for the buildout of the Draft Plan conditions are shown in Figure 12. The level of service calculations are summarized in Table 11. Copies of the level of service calculations are provided in the complete traffic report on file with the City. As stated in the discussion of previous impacts, increased volumes will not only impact the intersections mentioned above but will generally increase congestion on Novato streets. These are all potentially significant impacts.

Mitigation Measures Proposed in the General Plan

These potential impacts would be mitigated by the following Draft General Plan Transportation Chapter objectives and policies and their related programs.

TR Objective 1 Help reduce regional traffic growth.

TR Policy 1 Regional Transportation Efforts. Participate in regional transportation planning efforts.

TR Program 1.1: Continue to provide City Council and staff representation to the Congestion Management Agency and other regional transportation planning agencies.

TR Program 1.2: Work with the Marin Countywide Planning Agency to carry out the Congestion Management Plan.

TR Program 1.3: Continue to work with regional agencies to attain the objectives of the Marin Congestion Management Plan related to Highway 101. Do not adopt City standards for Highway 101, recognizing its regional function and State ownership and control.

TR Policy 2 Support Regional Alternatives to the Single-Occupant Vehicle. Support regional transportation policies and programs that increase the use of public transit, carpools, bicycles and other alternative modes of transportation and limit the growth of single-occupant vehicle traffic.

TR Program 2.1: Continue to provide staff resources to review, analyze, and monitor the effects of regional transportation plans on the use of alternative transportation modes.

TR Objective 2 Improve and manage the City's roadway system to accommodate future growth and maintain acceptable levels of service.

TR Policy 3 Coordinate Land Use with Transportation. Manage community growth and infrastructure projects so development can be adequately served by transportation facilities.

There are several measures that can be used to balance transportation with land use in addition to financing and building additional roadway improvements. Transportation Demand Management programs such as flexible hours, employer-financed shuttle buses, and growth management programs can reduce transportation impacts.

TR Program 3.1: Develop and maintain a citywide traffic model to evaluate the balance between development and transportation.

TR Program 3.2: Continue to assess the cumulative traffic impacts of development proposals on the City's transportation system.

TR Policy 4 Level of Service Standards. Establish traffic Level of Service (LOS) standards for use in (1) evaluating the impacts of proposed development projects so effective mitigation measures can be designed, (2) making improvements to the roadway system, and (3) determining appropriate traffic impact fees.

TR Program 4.1: Establish traffic Level of Service standards as follows:

- a. At Intersections: operation at LOS D for signalized intersections and four-way stop controlled intersections;*
- b. For side street operations with stop sign control: LOS E, except where side streets have very low traffic volumes, in which case LOS F conditions may be acceptable and may not warrant mitigation.*

Mitigation measures which reduce side street delay, such as traffic signals, all-way stop and/or center two-way left turn lanes will be considered when LOS F conditions are projected for side street traffic. The volume of traffic should also be considered when evaluating the severity of side street traffic operations.

Refer also to LU Program 7.2 which describes the different actions the City may take if analysis of proposed development project indicates that it would be likely to result in a violation of LOS standards.

TR Policy 5 Roadway Improvements Adopt a list of improvements that accommodates future growth consistent with the General Plan, enabling the roadway system to operate safely and efficiently.

TR Program 5.1: Prioritize construction of roadway improvements based on consideration of the following factors: periodic analysis of traffic service levels, the location of new development, and safety considerations.

TR Program 5.2: Construct the improvements listed in TR Table 4.

The City's Capital Improvement Program supported by specific project mitigation improvements shall provide for roadway and intersection improvements as determined necessary to meet traffic service and safety requirements and comply with all of the other goals and policies of the General Plan. Annual review of consistency of the City's Capital Improvement Program with the General Plan is required by State law.

It should be noted that some improvements involving access to U.S. 101 or S.R. 37 would require Caltrans approval and encroachment permits. Also, if the State of California funding is necessary for these improvements, the schedule for construction would be based on a STIP schedule.

TR Policy 6 Funding Ensure that development contributes to funding and/or implementing traffic mitigation measures.

TR Program 6.1: Prepare, adopt and implement a Citywide Traffic Mitigation Fee program.

TR Program 6.2: Include in conditions of approval, measures other than roadway improvements, such as Traffic Demand Management requirements, to reduce traffic impacts.

See also LU Policy 8, which pertains to impact fees for infrastructure improvements and public services.

TR Objective 9 Reduce travel demand.

TR Policy 23 Reducing Travel Demand: Promote measures to reduce travel demand.

TR Program 23.1: Continue to implement the City's Trip Reduction Ordinance.

TR Objective 10 Promote balanced funding for transportation systems.

TR Policy 24 Balanced Transportation Funding. Actively pursue funding for all transportation objectives consistent with the General Plan.

TR Program 24.1: Work with other jurisdictions in the County and the region and with the Metropolitan Transportation Commission to lobby for increased funding for alternative transportation modes.

TR Program 24.2: Obtain needed funding for transportation improvements from federal, state and county governments and from Traffic Impact Fees.

In addition, policies and programs under TR Objective 4 aimed at developing a safe circulation system and TR Objective 5 aimed at reducing dependence on the automobile reduce this impact.

These policies and programs provide the framework for requiring future circulation system improvements as they are needed to serve additional traffic. A number of the policies and programs are aimed at reducing automobile trips. However, even if substantial reduction does not occur, the policies and programs provide a framework for ensuring that Levels of Service do not fall below adopted minimums.

Additional Mitigation Measures Suggested

In general, these policies and programs substantially reduce congestion impacts. Land Use Policy 7 and associated programs ensure that the City will review new development projects per the Level of Service standards established in TR Policy 4. LU Program 7.2 states that new development will be reduced or delayed if adequate Levels of Service cannot be met, or, alternatively, approved if the project generates substantial public benefits.

While the Draft Plan policies and programs address the overall impacts, several site-specific mitigations are required for intersections that would be significantly affected by buildout traffic. The analysis of the six intersections projected to operate at an unacceptable level of service and recommended intersection improvements are described in the traffic report on file with the City. The intersections are listed below.

1. Novato Boulevard/7th Street/Tamalpais Avenue is expected to operate unacceptably at LOS E during the p.m. peak period. With mitigation the intersection will operate at LOS C.
2. Redwood Boulevard/Diablo Avenue/DeLong Avenue is expected to operate unacceptably at LOS F during the p.m. peak period. With mitigation the intersection will operate at LOS D.
3. U.S. 101 North Ramp/Nave Drive/Bel Marin Keys Boulevard is expected to operate unacceptably at LOS F during the p.m. peak period. With mitigation the intersection will operate at LOS D.
4. South Novato Boulevard/Sunset Parkway is expected to operate unacceptably at LOS E during the a.m. peak period. With mitigation the intersection will operate at LOS B.
5. Redwood Boulevard/Olive Avenue is expected to operate unacceptably at LOS F during both the a.m. and p.m. peak periods. With mitigation the intersection will operate at LOS C during the a.m. peak period and LOS D during the p.m. peak period.
6. Atherton Avenue/Bugeia Lane is expected to operate unacceptably at LOS F for the traffic exiting Bugeia Lane during both the a.m. and p.m. peak periods, and LOS E for traffic entering Bugeia Lane from eastbound Atherton Avenue during the p.m. peak period. With mitigation the intersection will operate at LOS C during the a.m. peak period and LOS D during the p.m. peak period.

The traffic reports list the specific intersection improvements for each intersection. These intersection-specific mitigations are incorporated into TR Policy 5 which calls for the required improvements when they become necessary to maintain Levels of Service.

With the inclusions of these EIR-recommended mitigations, the cumulative impact is reduced to a level below significance. No additional program mitigations are required. Specific projects must be assessed on a project-by-project basis to determine site-specific and local impacts and to determine necessary mitigations. While Draft Plan policies and programs ensure that minimum Levels of Service will be maintained, the City should be aware that Draft General Plan buildout will increase congestion on streets and at intersections throughout the city.

Impact 4.5-F The Bel Marin Keys Industrial Park Connection primarily benefits vehicular traffic between land uses in the Bel Marin Keys Boulevard area and S.R. 37 by reducing travel time between these two points.

Construction of this connector, as proposed in the Draft General Plan, will have a beneficial impact on local circulation congestion. The connection also results in less average delay at the U.S. 101 North Ramps/Bel Marin Keys Boulevard/Nave Drive and U.S. 101 South Ramps/Ignacio Boulevard/Enfrente Road intersections when compared with buildout under the Existing General Plan. Also, traffic volumes on U.S. 101 between S.R. 37 and Ignacio Boulevard are reduced by several hundred vehicles during peak hours with the connection. This segment on U.S. 101 is in the LOS F range with or without the proposed connection.

From a traffic perspective, this connection has benefits. As such, no mitigations are required.

Impact 4.5-G Buildout traffic will cause portions of Highway 101 and Highway 37 to operate at Level of Service F.

Under Draft General Plan buildout conditions, three segments are expected to operate at unacceptable LOS F conditions. These segments include U.S. 101 between S.R. 37 and Ignacio Boulevard (northbound/p.m.), U.S. 101 south of Ignacio Boulevard (northbound/p.m.), and S.R. 37 between U.S. 101 and Atherton Avenue (eastbound/p.m.). Table 15 shows the additional traffic that buildout under the Draft General Plan will add to Highway 101 and Highway 37. It is interesting to note that well over half of the new traffic will come from development outside Novato. Table 15 indicates that existing congestion problems on Highway 101 and Highway 37 will become worse as growth in Novato and elsewhere continues. This is a significant impact.

The methodology used to calculate freeway traffic operations is described in detail in the complete traffic report on file with the City.

Mitigation Measures Proposed by the Draft General Plan

These potential impacts are addressed by the following Draft General Plan Transportation Chapter objectives and policies and their related programs.

TR Objective 1 Help reduce regional traffic growth.

TR Policy 1 Regional Transportation Efforts. Participate in regional transportation planning efforts.

TR Program 1.1: Continue to provide City Council and staff representation to the Congestion Management Agency and other regional transportation planning agencies.

TR Program 1.2: Work with the Marin Countywide Planning Agency to carry out the Congestion Management Plan.

TR Program 1.3: Continue to work with regional agencies to attain the objectives of the Marin Congestion Management Plan related to Highway 101. Do not adopt City standards for Highway 101, recognizing its regional function and State ownership and control.

TR Policy 2 Support Regional Alternatives to the Single-Occupant Vehicle. Support regional transportation policies and programs that increase the use of public transit, carpools, bicycles and other alternative modes of transportation and limit the growth of single-occupant vehicle traffic.

TR Program 2.1: Continue to provide staff resources to review, analyze, and monitor the effects of regional transportation plans on the use of alternative transportation modes.

As described previously under other impacts, the Transportation Chapter of the Draft Plan contains policies and programs to reduce dependence on the automobile (Policies 12-20), reduce travel demand (Policy 23), and reduce regional traffic growth (Policies 1-2). While these policies may reduce traffic on Highway 101 and Highway 37, the decrease will not prevent portions of these highways operating at LOS F. This remains a significant impact.

Additional Mitigation Measures Suggested

Theoretically, no growth could occur within the City of Novato beyond existing conditions in order to maintain LOS E conditions or better on U.S. 101 within the City Limits of Novato. However, if no growth occurs in the City of Novato, it is very likely that the through traffic demand (i.e., demand generated by people traveling to and from Sonoma County) would increase more than assumed in these projections. Therefore, LOS F may still be reached even with no growth in Novato. It should be noted that the Marin Countywide Plan acknowledges LOS F conditions for U.S. 101 with little option for improving these conditions. Nevertheless, buildout under the Draft Plan will aggravate an existing significant problem. Many Novato residents and employees will be affected by this highway congestion. Not only will drivers lose time by being stuck in traffic, this congestion also creates safety problems. This is considered a significant adverse impact. Also, buildout causes a portion of Highway 37 to operate at LOS F. As such, this is considered a significant adverse impact which cannot be satisfactorily mitigated to a level that is less than significant.

Table 15

**Freeway Level of Service Conditions
Draft General Plan**

Locations	Existing						2010 Buildout					
	A.M.			P.M.			A.M.			P.M.		
	Vol	Speed	LOS	Vol	Speed	LOS	Vol	Speed	LOS	Vol	Speed	LOS
U.S. 101												
N/Atherton - NB	1405	59	B	3489	38	E	2922	56	B	4349	47	C
N/Atherton - SB	4287	48	C	1569	59	B	4713	43	D	3796	51	B
37 to Ignacio - NB	2534	59	B	7259	36	E	4029	56	B	8822	24	F
37 to Ignacio - SB	6651	41	E	3930	57	B	7499	34	E	6089	43	D
S/Ignacio - NB	2640	59	B	7487	34	E	3799	57	B	8512	26	F
S/Ignacio - SB	6347	43	D	3480	58	B	6847	39	E	5326	50	B
S.R. 37												
101 to Atherton - EB	756	59	B	1624	58	B	1107	59	B	4007	29	F
101 to Atherton - WB	2097	56	B	1196	59	B	3378	39	E	2171	56	B

Impact 4.5-H Buildout traffic must be in compliance with the Congestion Management Plan.

In order to be in compliance with the *Draft 1995 Congestion Management Program*, the City of Novato should notify the County Congestion Management Agency of its new land use zoning which would be adopted as part of this general plan update. The Marin County Congestion Management Program states, "Every application for a General Plan Amendment that would generate a net increase or decrease of 100 vehicle trips during the P.M. (afternoon) peak hour is to be forwarded to the CMA for analysis."

Mitigation Measures Proposed by the Draft General Plan

Given that the Draft Plan generates less traffic than the previous general plan, the County CMP model would need to be run with these new land use assumptions. The Draft General Plan Transportation Chapter (Policy 1) calls for development and traffic to be consistent with the Congestion Management Plan. This policy mitigates this impact.

Additional Mitigation Measures Suggested

In order to meet the level of service standards on the City streets which are part of the CMP system, the mitigation measures included in this report would need to be implemented before a deficient level of service is reached. Because U.S. 101 through Novato was grandfathered in at LOS F, this existing deficient level of service would not prohibit development within the City of Novato.

It is noted that if and when Highway 37 begins operating below LOS E, the City must prepare a deficiency plan which may be comprised either of measures and a schedule for implementation to achieve the accepted standard, or a specific list of improvements, programs or actions which will measurably improve the overall level of service on the designated system and contribute significant improvements to local air quality.

Mitigation Summary

A summary of the transportation improvements is provided in Table 18. The table shows the improvements required for the Draft Plan as well as the two alternatives analyzed by the traffic engineers.

2. Alternative Plan Analyses

The following analyses address traffic impacts that would result from two of the alternatives assessed in this EIR: buildout under the existing General Plan (Alternative 1 in this EIR) and buildout under another alternative (Alternative 2 in this EIR) devised by City staff and the General Plan consultants.

Existing General Plan (Alternative 1) Impacts and Mitigation

Circulation Improvements

The *Existing General Plan* scenario includes the following transportation improvements.

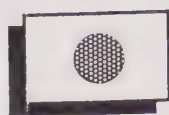
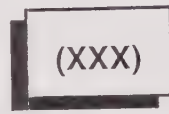
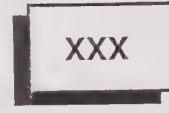
1. U.S. 101 - Extend the High Occupancy Vehicle Lane (HOV) from its current terminus at S.R. 37 to Atherton Avenue. Extend the lane farther northward when a contiguous HOV lane is developed in Sonoma County. Do not build another interchange in North Novato, but plan improvements to provide better access to Olompali State Park and to provide safe access and egress to and from the Redwood Sanitary Landfill.
2. Reichert Avenue Extension - Extend Reichert Avenue from Sweetser Avenue to Vallejo Avenue.
3. Novato Boulevard (7th Street to Diablo Avenue) - Widen to four through lanes.

Methodology

Traffic projections, trip distributions, and trip generation were devised in the same fashion as previously described for the Draft Plan. Land use assumptions used for the following analysis are described in Table 12.

FIGURE 13

EXISTING GENERAL PLAN
TRAFFIC VOLUMES

-  Study Intersection
-  AM Peak Hour Traffic
-  PM Peak Hour Traffic



SOURCE: Whitlock & Weinberger
Transportation, Inc.

City of Novato General Plan Revision
Administrative Draft
Environmental Report

Revised & Recirculated
November, 1995

This map was developed for General Plan purposes. The City of Novato is not responsible or liable for use of this map beyond its intended purpose. More detailed information is available at the Novato Community Development Department.

Impacts

Under the conditions which are anticipated upon buildout of the existing General Plan, vehicular trips are anticipated to increase by approximately 47 percent over current levels. This increase in traffic would be expected to generate the following impacts.

Buildout under this alternative will increase traffic volumes compared to the Draft Plan by 2,000 trips during the a.m. peak hour period and 1,800 trips during the p.m. peak hour period (see Table 10 for a comparison). Table 11 shows the future LOS at study intersections for this alternative.

The first four impacts identified for the Draft Plan (i.e., Impacts 4.5-A, 4.5-B, 4.5-C, and 4.5-D) would also occur under this alternative. The policies and programs listed under each impact would also apply and mitigate the impact to a level that is less than significant. However, it should be noted as shown on Table 11, that traffic generated by this alternative will increase traffic congestion at many locations, when compared to the Draft Plan. While these four impacts can be satisfactorily mitigated, there will remain additional safety impacts, impacts to residential streets, and bicyclist and pedestrian impacts than would occur under the Draft Plan.

As regards congestion impacts, nine of the 24 study intersections will operate unacceptably under buildout from the Existing General Plan. These particular intersection impacts can all be mitigated to an acceptable level. The analysis of each impact and a description of the required intersection improvements are included in the complete traffic report on file with the City. The following intersections are impacted.

1. U.S. 101 South Ramp/Ignacio Boulevard/Enfrente Road is expected to operate unacceptably at LOS E during the p.m. peak period. With mitigation the intersection will operate at LOS C.
2. Redwood Boulevard/Diablo Avenue/DeLong Avenue is expected to operate unacceptably at LOS F during the p.m. peak period. With mitigation the intersection will operate at LOS D.
3. U.S. 101 North Ramp/Nave Drive/Bel Marin Keys Boulevard is expected to operate unacceptably at LOS F during the p.m. peak period. With mitigation the intersection will operate at LOS D.
4. South Novato Boulevard/Sunset Parkway is expected to operate unacceptably at LOS E during the a.m. peak period. With mitigation the intersection will operate at LOS B.
5. Redwood Boulevard/Olive Avenue is expected to operate unacceptably at LOS F during both the a.m. and p.m. peak periods. With mitigation the intersection will operate at LOS C during the a.m. peak period and LOS D during the p.m. peak period.
6. Atherton Avenue/Bugeia Lane is expected to operate unacceptably at LOS F for the traffic exiting Bugeia Lane during both the a.m. and p.m. peak periods, and LOS E for traffic entering Bugeia Lane from eastbound Atherton Avenue during the p.m. peak period. With mitigation the intersection will operate at LOS C during the a.m. peak period and LOS D during the p.m. peak period.

7. U.S. 101 North Ramps/DeLong Avenue is expected to operate unacceptably at LOS E during the p.m. peak period. With mitigation the intersection will operate at LOS C.
8. Redwood Boulevard/San Marin Drive is expected to operate unacceptably at LOS F during the p.m. peak period. With mitigation the intersection will operate at LOS D.
9. U.S. 101 North Ramps/Atherton Avenue is expected to operate unacceptably at LOS F during the p.m. peak period. With mitigation the intersection will operate at LOS C.

Freeway Traffic Operations

As shown on Table 16, two sections of Highway 101 and one section of Highway 37 would operate at LOS F in the year 2010. This is the same as for the Draft Plan. However, this alternative further aggravates the problem by increasing the traffic volumes on these highways.

Table 16
Freeway Level of Service Conditions
Existing General Plan (Alternative 1)

Locations	Existing						2010 Buildout					
	A.M. Peak Hour			P.M. Peak Hour			A.M. Peak Hour			P.M. Peak Hour		
	Vol	Speed	LOS	Vol	Speed	LOS	Vol	Speed	LOS	Vol	Speed	LOS
U.S. 101												
N/Atherton - NB	1405	59	B	3489	38	E	3006	56	B	4476	46	D
N/Atherton - SB	4287	48	C	1569	59	B	4817	42	D	3910	51	B
37 to Ignacio - NB	2534	59	B	7259	36	E	4166	56	B	9039	23	F
37 to Ignacio - SB	6651	41	E	3930	57	B	7620	33	E	6287	43	D
S/Ignacio - NB	2640	59	B	7487	34	E	3931	56	B	8594	26	F
S/Ignacio - SB	6347	43	D	3480	58	B	6887	38	E	5507	49	C
S.R. 37												
101 to Ather - EB	756	59	B	1624	58	B	1106	59	B	4054	29	F
101 to Ather - WB	2097	56	B	1196	59	B	3439	38	E	2173	55	B

Notes: NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound, N/ = North of, S/ = South of
 Vol = A.M. or P.M. Peak Hour traffic volume, Speed = Average travel speed on specified segment, LOS = Roadway Segment Level of Service
 Level of Service Methodology based on 1985 Highway Capacity Manual
 Existing and Buildout volumes based on data from the Marin County traffic model and the Novato General Plan traffic assignment.
 Buildout scenario represents Year 2010 with HOV lanes to the Sonoma County line and passenger rail service on the NWPRR ROW

Bel Marin Keys Connector

This alternative does not include this connector. This will increase traffic using Bel Marin Keys Boulevard and the Ignacio interchange. It will not substantially affect traffic volumes on critical sections of Highway 101 or Highway 37.

Alternative 2 Impacts and Mitigation

Circulation Improvements

The *Second Plan Alternative* scenario includes the following additional transportation improvements.

1. U.S. 101 - Extend the High Occupancy Vehicle lane (HOV) from its current terminus at S.R. 37 to Atherton Avenue. Extend the lane farther northward when a contiguous HOV lane is developed in Sonoma County. Do not build another interchange in North Novato, but plan improvements to provide better access to Olompali State Park and to provide safe access and egress to and from the Redwood Sanitary Landfill.
2. Northwestern Pacific Railroad Right-of-Way - Retain the right-of-way for public transit use, with the exact mode to be specified in the future. Consider using this right-of-way for a busway or a bike path. It is important to preserve this continuous right-of-way through the County and to plan facilities, in areas such as the old train station based on the assumption of future transit use.
3. Additional Public Transit Services - The City should support development of additional intra-city public transit services, possibly using innovative technology, to connect employment centers such as Fireman's Fund, Downtown, Vintage Oaks, Hamilton, and Bel Marin Keys, using the railroad right-of-way, jitneys and other modes.

As specified in the *Plan Alternative Report*, the following transportation projects are not recommended for inclusion for Alternative 2:

1. Reichert Avenue Extension - Extending Reichert Avenue from Sweetser Avenue to Vallejo Avenue would destroy the lumber yard, a key component of the commercial/industrial/construction related business area north of Grant Avenue.
2. South Novato Boulevard Overcrossing - This project would increase through traffic on South Novato Boulevard from commuters by-passing U.S. 101.
3. Widening Novato Boulevard (7th Street to Diablo Avenue) - This project would be unnecessarily disruptive to adjacent residential areas.
4. McInnis Parkway - The project would not help solve Novato's traffic problems. The route has been deleted from the Marin Countywide Plan, and may not be required if Novato's *Draft General Plan* reduces the commercial development potential.

Methodology

Traffic projections, trip distributions, and trip generation were devised in the same fashion as previously described for the Draft Plan. Land use assumptions used for the following analysis are described in Table 12.

Impacts

Buildout under this alternative will decrease traffic volumes compared to the Draft Plan by 500 trips during the a.m. peak hour period and 2,100 trips during the p.m. peak hour period (see Table 10 for a comparison). Table 11 shows the future LOS at study intersections for this alternative.

The first four impacts identified for the Draft Plan (i.e., Impacts 4.5-A, 4.5-B, 4.5-C, and 4.5-D) would also occur under this alternative. The policies and programs listed under each impact would also apply and mitigate the impact to a level that is less than significant. However, it should be noted as shown on Table 11, that traffic generated by this alternative will reduce traffic congestion at many locations, when compared to the Draft Plan. This reduced traffic volume will decrease safety impacts, impacts to residential streets, and bicyclist and pedestrian impacts as compared to what would occur under the Draft Plan.

As regards congestion impacts, five of the 24 study intersections will operate unacceptably under buildout from Alternative 2. Select road segment volumes for the buildout of the Alternative 2 are shown in Figure 14. The level of service calculations are summarized in Table 11. Copies of the level of service calculations are provided in the complete report on file with the City.

Analyses and mitigations for intersections are analyzed in the complete traffic report on file with the City. To summarize that report:

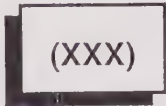
1. Redwood Boulevard/Diablo Avenue/DeLong Avenue is expected to operate unacceptably at LOS F during the p.m. peak period. With mitigation the intersection will operate at LOS D.
2. U.S. 101 North Ramp/Nave Drive/Bel Marin Keys Boulevard is expected to operate unacceptably at LOS F during the p.m. peak period. With mitigation the intersection will operate at LOS D.
3. South Novato Boulevard/Sunset Parkway is expected to operate unacceptably at LOS E during the a.m. peak period. With mitigation the intersection will operate at LOS B.
4. Redwood Boulevard/Olive Avenue is expected to operate unacceptably at LOS F during both the a.m. and p.m. peak periods. With mitigation the intersection will operate at LOS C during the a.m. peak period and LOS D during the p.m. peak period.
5. Atherton Avenue/Bugeia Lane is expected to operate unacceptably at LOS F for the traffic exiting Bugeia Lane during both the a.m. and p.m. peak periods, and LOS E for traffic entering Bugeia Lane from eastbound Atherton Avenue during the p.m. peak period. With mitigation the intersection will operate at LOS C during the a.m. peak period and LOS D during the p.m. peak period.

FIGURE 14

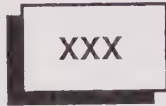
ALTERNATIVE 2
TRAFFIC VOLUMES



Study Intersection



AM Peak Hour Traffic



PM Peak Hour Traffic



SOURCE: Whitlock & Weinberger
Transportation, Inc.

City of Novato General Plan Revision
Administrative Draft
Environmental Report

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November, 1995

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Freeway Traffic Operations

As shown on Table 17, the two sections of Highway 101 would operate at LOS F in the year 2010. This is the same as for the Draft Plan. However, Highway 37 will operate at LOS E rather than LOS F under the Draft Plan. This alternative also reduces peak hour traffic volumes on critical sections of Highway 101.

Table 17
Freeway Level of Service Conditions
Alternative 2

Locations	Existing						2010 Buildout					
	A.M.			P.M.			A.M.			P.M.		
	Vol	Speed	LOS	Vol	Speed	LOS	Vol	Speed	LOS	Vol	Speed	LOS
U.S. 101												
N/Atherton - NB	1405	59	B	3489	38	E	2719	57	B	4295	47	C
N/Atherton - SB	4287	48	C	1569	59	B	4736	43	D	3467	54	B
37 to Ignacio - NB	2534	59	B	7259	36	E	3907	56	B	8754	25	F
37 to Ignacio - SB	6651	41	E	3930	57	B	7564	33	E	5865	46	D
S/Ignacio - NB	2640	59	B	7487	34	E	3751	57	B	8442	27	F
S/Ignacio - SB	6347	43	D	3480	58	B	6820	39	E	5211	51	B
S.R. 37												
101 to Ather - EB	756	59	B	1624	58	B	1085	59	B	3858	32	E
101 to Ather - WB	2097	56	B	1196	59	B	3367	39	E	2084	55	B

Bel Marin Keys Connector

This alternative does not include this connector. This will increase traffic using Bel Marin Keys Boulevard and the Ignacio interchange. It will not substantially affect traffic volumes on critical sections of Highway 101 or Highway 37.

Table 18

Transportation Improvement Summary

TRANSPORTATION IMPROVEMENTS	SCENARIOS WHICH INCLUDE MEASURE		
	Existing General Plan	Preferred Plan	Second Plan Alternative
Planned Improvements with Implementation Committed			
Turn lane and traffic signals on Nave Dr.	✓	✓	✓
Improve the Ignacio/Bel Marin Keys Blvd. Interchange	✓	✓	✓
Provide left-turn pockets on Atherton Ave.	✓	✓	✓
Widen So. Novato Blvd. - Diablo Blvd. to Rowland Blvd.	✓	✓	✓
Interconnect downtown traffic signals	✓	✓	✓
Planned Improvements Assumed in the Alternative Analysis			
Extend HOV lanes on U.S. 101 from S.R. 37 to Sonoma County line	✓	✓	✓
Extend Reichert Ave. from Sweetser Ave. to Vallejo Ave.	✓		
Widen Novato Blvd. - 7th St. to Diablo Ave.	✓		
Implement Passenger Rail service on NWPRR right-of-way		✓	✓
Implement Additional Public Transit services		✓	✓
Provide a connector from Bel Marin Keys to S.R. 37		✓	
Additional Improvements Recommended to Mitigate Unacceptable Operation			
Widen Novato Blvd - 7th St. to Diablo Ave.		✓	
Revising phasing and add a left-turn lane eastbound at Redwood Blvd./Diablo Ave./DeLong Ave.	✓	✓	✓
Add a right-turn lane eastbound at U.S. 101S/Ignacio Blvd.	✓		
Revise striping eastbound at U.S. 101N/Bel Marin Keys Blvd.	✓	✓	✓
Revise striping eastbound at U.S. 101N/DeLong Ave.	✓		
Add lanes to all approaches to Redwood Blvd. San Marin Dr.	✓		
Add a right-turn lane westbound and through lane eastbound at U.S. 101N/Atherton Ave.	✓		
Install a signal at So. Novato Blvd. Sunset Pkwy.	✓	✓	✓
Install a signal at Redwood Blvd./Olive Ave.*	✓	✓	✓
Add a right-turn lane northbound at Redwood Blvd. Olive Ave.	✓		
Install a signal at Atherton Ave./Bugeia Ln.	✓	✓	✓
Southbound right turn overlap on Rowland Way at Rowland Blvd.	✓	✓	✓
Improvements Recommended as part of other EIR's			
Lane improvements at San Marin Drive Redwood Drive and San Marin Drive/U.S. 101 Ramps	✓	✓	✓

* Required for Existing Conditions

4.6 AIR QUALITY

This section was prepared by Donald Ballanti, Consulting Meteorologist.

A. Setting

Air Basin Characteristics

Novato is within the San Francisco Bay Air Basin, and is within the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). Novato air quality is greatly influenced by its location on the west (and upwind) edge of the air basin. The prevailing wind directions are northwesterly and southeasterly reflecting the influence of marine air flows through the Golden Gate to the south and the Estero Lowlands to the northwest. There is little development upwind of Novato, so air quality is relatively good.

Air Quality Standards

The Clean Air Act of 1967, as amended, established air quality standards for several pollutants. These standards are divided into primary standards which are designed to protect the public health and secondary standards which are intended to protect the public welfare from effects such as visibility reduction, soiling, nuisance, and other forms of damage. In addition, the State of California has adopted its own standards. The state standards are durations of time for specific contaminant levels which are designed to avoid adverse effects with a margin of safety. The state and federal standards for criteria pollutants are shown in Table 19

The state standards are in general more stringent than the corresponding federal standards. This is particularly true for ozone and PM-10.

Table 19

Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Primary Standard		State Standard	
Ozone	1-hour	0.12	PPM	0.09	PPM
Carbon Monoxide	8-hour	9.0	PPM	9.0	PPM
	1-hour	35.0	PPM	20.0	PPM
Nitrogen Dioxide	Annual	0.05	PPM	---	
	1-Hour	---		0.25	PPM
Sulfur Dioxide	Annual	0.03	PPM	---	
	24-Hour	.14	PPM	0.05	PPM
	1-Hour	---		0.5	PPM
PM-10	Annual	50	µg/m ³	30	µg/m ³
	24-Hour	150	µg/m ³	50	µg/m ³
Lead	30-Day Average	---		1.5	µg/m ³
	Month Average	1.5	µg/m ³	---	

Air Pollutant Sources

Novato contains a multitude of air pollution sources. The combustion of fuel for space and water heating, industrial processes and commercial uses is one such pollutant source. The evaporation of fuels and solvents, incineration, fires, and pesticide use are other examples of typical pollutant sources. The largest single source of pollutants is on-road vehicles, which in Marin County as a whole are responsible for 77 percent of the emitted carbon monoxide and oxides of nitrogen, 32 percent of the emitted hydrocarbons, and 8 percent of the emitted particulates (BAAQMD, October 1991).

The largest single source of vehicular emissions within Novato is the U.S. Highway 101 corridor. The only stationary source appearing on the Bay Area Air Quality Management District's inventory of major sources is the Redwood Landfill Inc. landfill gas collection system, which emits significant amounts of oxides of nitrogen and carbon monoxide.

Current Air Quality

The Bay Area Air Quality Management District operates a network of air monitoring sites in the Bay Area. The closest monitoring site is located in San Rafael, several miles south of Novato. Air quality in this portion of the San Francisco Bay Air Basin is relatively good. All state and federal ambient air quality standards are met at the San Rafael monitoring site with the exception of the state ambient air quality standard for PM-10. State or federal ambient air quality standards for ozone and carbon monoxide are also exceeded in other portions of the nine-county air basin.

Regional Air Quality Planning

Attempts to combat air quality problems began at the federal level with the enactment of the Clean Air Act of 1967. Initial efforts were the establishment of national ambient standards, designation of local air pollution control districts and creation of an air quality monitoring network.

State and local agencies have over the last 20 years adopted regulations on a multitude of air pollutant sources. After obvious and major sources of pollution were controlled (factories, automobiles) controls were implemented on smaller sources (gasoline vending, solvent-based paints for example).

The Federal Clean Air Act and the California Clean Air Act of 1988 require that the State Air Resources Board, based on air quality monitoring data, designate portions of the state where the federal or state ambient air quality standards are not met as "nonattainment areas." Because of the differences between the national and state standards, the designation of nonattainment areas is different under the federal and state legislation.

The Bay Area recently was recently redesignated by the U.S. Environmental Protection Agency as a "maintenance area" for ozone. The "Urbanized Area" of the air basin is considered nonattainment for carbon monoxide (however, a request for redesignation to "maintenance area" has been submitted to the U. S. Environmental Protection Agency). The air basin is an attainment area or is unclassified for all other national ambient air quality standards.

Under the California Clean Air Act, the entire San Francisco Bay Air Basin is a nonattainment area for ozone and PM-10. Marin County is designated an attainment area

for carbon monoxide, and the air basin is either attainment or unclassified for other pollutants.

The Bay Area has both a federal and state air quality plan. The approved federal plan is the 1982 *Bay Area Clean Air Plan* (as amended, Association of Bay Area Governments, 1982). The area-wide plan required by the California Clean Air Act (*Bay Area '91 Clean Air Plan*) was adopted in October 1991 (BAAQMD, 1991). Both plans propose the imposition of controls on stationary sources (factories, power plants, industrial sources, etc.) and Transportation Control Measures designed to reduce emissions from automobiles.

B. Potential Impacts and Mitigations

Criteria Used to Determine Significance

A project will have a significant impact if it:

1. Violates any ambient air quality standard, contributes substantially to an existing or projected air quality violation, or exposes sensitive receptors to substantial pollutant concentrations.
2. Results in substantial emissions or deterioration of ambient air quality.
3. Creates objectionable odors.
4. Alters air movement, moisture, or temperature, or results in any change in climate, either locally or regionally.
5. Results in population or employment projections exceeding those assumed within the regional non-attainment plan (BAAQMD, 1985).

Impacts and Mitigation Measures

The adoption of the Draft General Plan would not have a direct air quality effect. Indirectly, the Draft General Plan would accommodate new growth in population and employment, affecting local and regional air quality. The development of new land uses could also create air quality-related land use conflicts.

Impact 4.6-A Development in accordance with the Draft General Plan would alter traffic volumes and change concentrations of localized pollutants such as carbon monoxide near streets and intersections.

On the local scale the pollutant of greatest interest is carbon monoxide. Concentrations of this pollutant are related to the levels of traffic and congestion along streets and at intersections. Population and employment growth within Novato would affect carbon monoxide concentrations, particularly at major intersections.

Carbon monoxide concentrations out to the year 2010 were predicted within the *Marin Countywide Plan EIR* (County of Marin, 1993). The CALINE-4 computer simulation

model was applied to the future roadway network and projected traffic volumes to predict worst-case 1-hour and 8-hour average concentrations of carbon monoxide at 46 receptors within Marin County. Fifteen receptors were located within the City of Novato at locations near congested roadways where people would be exposed to vehicle-generated carbon monoxide for extended periods. The modeling results show that under existing conditions or projected year 2010 conditions neither the 1-hour or 8-hour ambient air quality standards for carbon monoxide would be exceeded at the City of Novato receptors. Project impacts on local carbon monoxide concentrations are considered to be less than significant.

The *Marin Countywide Plan EIR* analysis was based on slightly different assumptions regarding buildout year and ultimate buildout potential for the Novato Planning Area than assumed in this EIR. However, the differences are so small that the county analysis is expected to accurately depict impacts of the proposed Draft General Plan. Buildout under the Draft General Plan is less than projected under the Countywide Plan.

Mitigation Measures of the Draft General Plan

Even though the impact is less than significant, the Environment Chapter includes the following policies and programs to further reduce air quality effects:

EN Objective 9: Work to protect and improve air quality.

EN Policy 32 Regional Planning to Improve Air Quality. Continue to cooperate with the Bay Area Air Quality Management District (BAAQMD) in implementing the regional Clean Air Plan.

EN Program 32.1: Use the environmental review process to determine whether air emissions from proposed development would exceed BAAQMD standards.

EN Policy 33 Vehicle Trips. Encourage transportation facilities and modes that minimize motor vehicle use.

EN Program 33.1: Continue the Trip Reduction Ordinance.

EN Policy 34 Local Efforts. Encourage local efforts to improve air quality.

EN Program 34.1: Use the City's development review process and the California Environmental Quality Act (CEQA) regulations to evaluate and mitigate the local and cumulative effects of new development on air quality.

EN Program 34.2: Continue to include responsible agencies in the review of proposed land uses that would handle, store or transport any potential air pollutant sources such as, but not limited to, lead, mercury, vinyl chloride, benzene, asbestos, beryllium, and all fuels.

EN Program 34.3: Continue to require and enforce a dust emissions control plan for construction.

In addition, the Transportation Chapter contains a substantial number of policies and programs aimed at reducing dependence on the automobile and enhancing bicyclist and pedestrian facilities (see the Transportation Chapter, TR Policies 12-20, and their attendant programs).

Additional Mitigation Measures Suggested

The impact is not significant. Additional mitigation measures are not required for this impact.

Impact 4.6-B Development in accordance with the Draft General Plan would result in additional emissions from vehicles and stationary sources affecting the regional air basin.

Automobile emissions associated with buildout under the Draft General Plan have been estimated using the EMFAC7-F emissions factors and vehicle trip characteristics projected by the Metropolitan Transportation Commission (Metropolitan Transportation Commission, 1991). A spreadsheet program was utilized to calculate and sum emissions for the different trip types and emission types. The incremental daily emission at buildout is shown in Table 20 for reactive hydrocarbons and oxides of nitrogen (two precursors of ozone), carbon monoxide and PM-10. These emissions are not a significant impact.

Residential uses contain a number of dispersed and intermittent sources of pollutants such as space and water heaters, household paints and solvents, fireplaces and woodstoves, lawn mowers and other equipment (BAAQMD, 1985). These emissions have been estimated and are shown in Table 20.

Table 20

Project Regional Emissions Impacts, in Pounds Per Day (Buildout Under Draft General Plan)

	ROG	NO_x	CO	PM-10
Vehicle Travel	386	579	3608	288
Area Sources	644	128	371	42
Total	1030	707	3979	330

ROG = Reactive Organic Gases

NO_x = Nitrogen Oxides

CO = Carbon Monoxide

PM-10 = Particulate Matter, 10 microns

Buildout of the Draft General Plan could result in new light industry within the City of Novato. The type or amount of such emissions is not predictable, since industrial emissions can vary greatly depending on the processes and materials involved. Any future industrial sources would be subject to the rules and regulations of the Bay Area Air Quality Management District, which currently requires major new stationary sources to utilize BACT (Best Available Control Technology) and provide off-sets.

The incremental increase in regional emissions shown in Table 20, although substantial, would only represent a significant impact if it were based on population and employment projections that substantially exceeded that assumed in the *Bay Area '91 Clean Air Plan*.

This is because the regional air plan has assumed and accounts for an incremental amount of growth within Novato.

Comparison of the ABAG population projections used in the regional air plan with that projected with buildout under the Draft General Plan reveals that the population growth rate is less than that assumed in the regional air plan. Project impacts on regional air quality are considered to be less than significant.

Mitigation Measures of the Draft General Plan

Though the impact is less than significant, the Environment Chapter includes policies and programs to further reduce air quality impacts. These policies and programs were listed under Impact 4.6-A.

Additional Mitigation Measures Suggested

The impact is less than significant. Additional mitigation measures are not required for this impact.

4.7 NOISE

This section was prepared by Rich Rodkin, consulting acoustic engineer.

A. Setting

Background Information on Noise

Noise is defined as unwanted sound. Airborne sound is a rapid fluctuation of air pressure above and below atmospheric pressure. Sound levels are usually measured and expressed in decibels (dB) with 0 dB corresponding roughly to the threshold of hearing. Decibels and other technical terms are defined in Table 21.

Most of the sounds which we hear in the environment do not consist of a single frequency, but rather a broad band of frequencies, with each frequency differing in sound level. The intensities of each frequency add together to generate a sound. The method commonly used to quantify environmental sounds consists of evaluating all of the frequencies of a sound in accordance with a weighting that reflects the fact that human hearing is less sensitive at low frequencies and extreme high frequencies than in the frequency mid-range. This is called "A" weighting, and the decibel level so measured is called the A-weighted sound level (dBA). In practice, the level of a sound source is conveniently measured using a sound level meter that includes an electrical filter corresponding to the A-weighting curve. Typical A-levels measured in the environment and in industry are shown in Table 22 for different types of noise.

Although the A-weighted noise level may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Most environmental noise includes a conglomeration of noise from distant sources which create a relatively steady background noise in which no particular source is identifiable. To describe the time-varying character of environmental noise, the statistical noise descriptors, L_{01} , L_{10} , L_{50} , and L_{90} , are commonly used. They are the A-weighted noise levels equaled or exceeded during 1%, 10%, 50%, and 90% of a stated time period. A single number descriptor called the L_{eq} is also widely used. The L_{eq} is the average A-weighted noise level during a stated period of time.

In determining the daily level of environmental noise, it is important to account for the difference in response of people to daytime and nighttime noises. During the nighttime, exterior background noises are generally lower than the daytime levels. However, most household noise also decreases at night and exterior noise becomes very noticeable. Further, most people sleep at night and are very sensitive to noise intrusion. To account for human sensitivity to nighttime noise levels, a descriptor, L_{dn} (day/night average sound level), was developed. The L_{dn} divides the 24-hour day into the daytime of 7:00 AM to 10:00 PM and the nighttime of 10:00 PM to 7:00 AM. The nighttime noise level is weighted 10 dB higher than the daytime noise level. The Community Noise Equivalent Level (CNEL) is another 24-hour average which includes both an evening and nighttime weighting.

Table 21

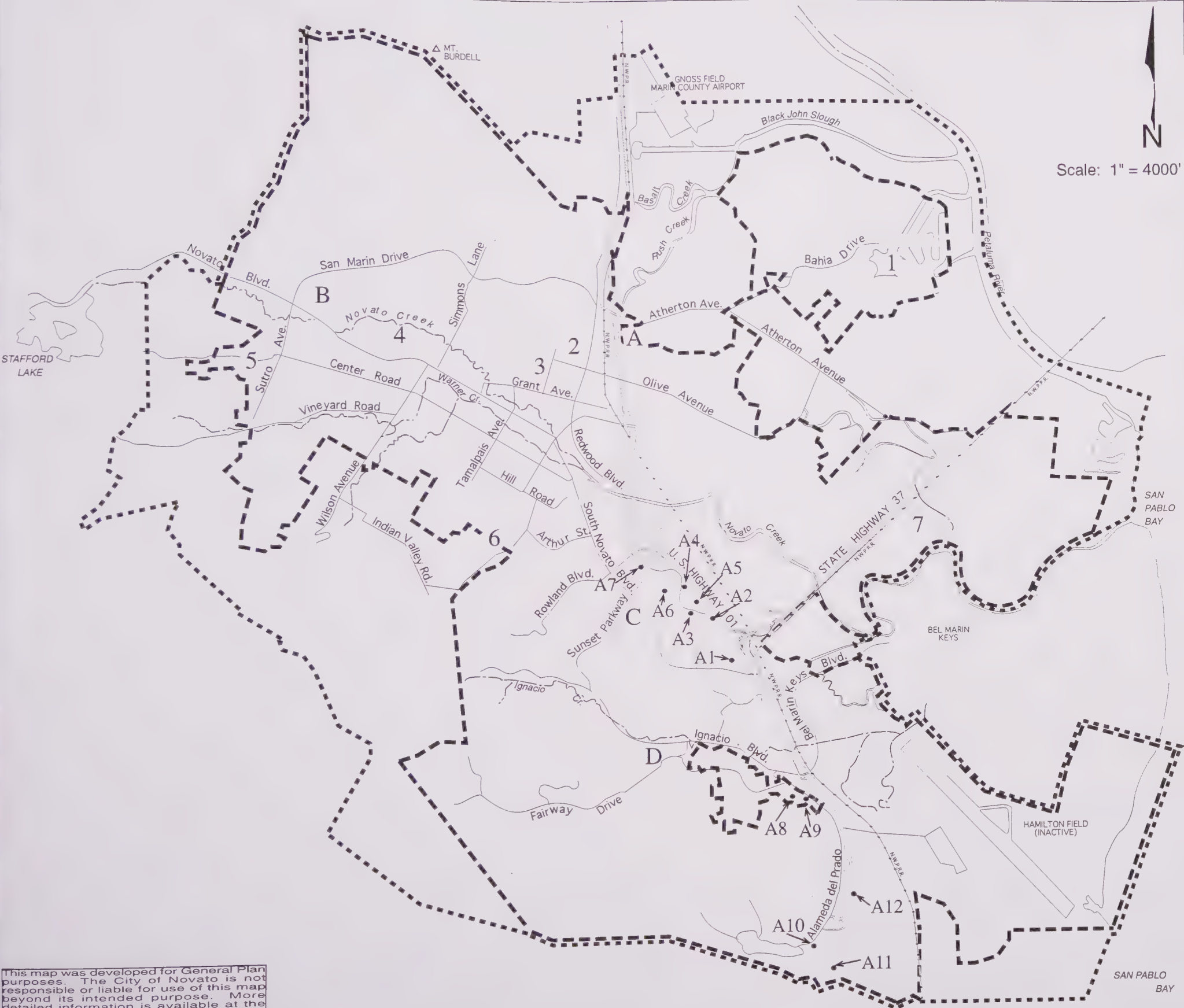
Definitions of Terms

TERM	DEFINITION
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter).
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted, unless reported otherwise.
L ₀₁ , L ₁₀ , L ₅₀ , L ₉₀	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Equivalent Noise Level, L _{eq}	The average A-weighted noise level during the measurement period.
Community Noise Equivalent Level, L _{dn}	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10:00 pm and 7:00 am.
L _{max} , L _{min}	The maximum and minimum A-weighted noise level during the measurement period.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

FIGURE 15

NOISE MEASUREMENT LOCATIONS

- A--D 24 Hour noise measurement
- 1-7 Short term spot measurements
- A1-A12 Freeway noise measurements



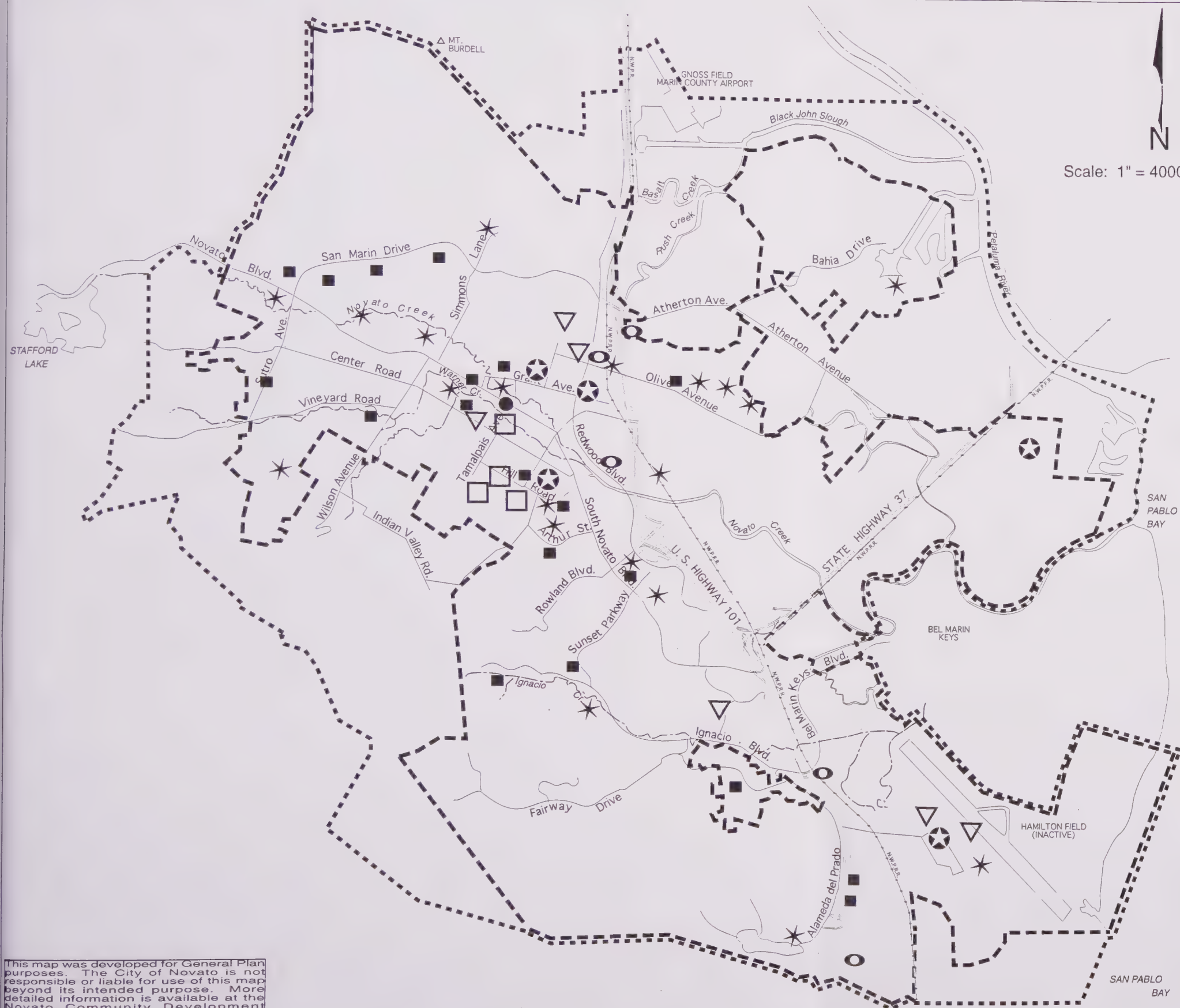
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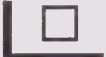



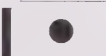

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FIGURE 16

SENSITIVE NOISE RECEPTORS



-  Schools (including vacant sites)
-  Hospitals/Nursing Homes
-  Parks (including undeveloped)
-  Housing for Elderly (including undeveloped)
-  Mobile Homes
-  Library
-  Public Assembly Buildings

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--- City Limit Line
..... Sphere Of Influence


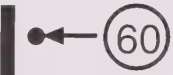
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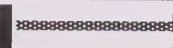

FIGURE 17

FUTURE NOISE CONTOURS $L_{dn}(dBA)^*$

Scale: 1" = 4000'

-  Freeway noise contour (calculated levels do not include shielding from terrain and soundwalls)
-  Projected U.S. 101 noise levels based on field measurements



Roadside noise level (50 ft. to centerline)

-  60 - 65 $L_{dn}(dBA)$
-  65 - 70 $L_{dn}(dBA)$
-  70 - 75 $L_{dn}(dBA)$

* L_{dn} : is a day/night average noise level
dBA: is decibels measured on a weighted sound level

SOURCE: Illingworth and Rodkin, Inc.

City of Novato General Plan Revision
Draft
Environmental Report

-  City Limit Line
-  Sphere Of Influence

Revised & Recirculated
November, 1995



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Table 22

**Typical Sound Levels Measured in the
Environment and Industry**

At a Given Distance From Noise Source	A-Weighted Sound Level in Decibels	Noise Environments	Subjective Impression
	140		
Civil Defense Siren (100')	130		
Jet Takeoff (200')	120		Pain Threshold
	110	Rock Music Concert	
Pile Driver (50')	100		Very Loud
Ambulance Siren (100')			
	90	Boiler Room	
Freight Cars (50')		Printing Press Plant	
Pneumatic Drill (50')	80	In Kitchen With Garbage Disposal Running	
Freeway (100')			
	70		Moderately Loud
Vacuum Cleaner (10')	60	Data Processing Center	
		Department Store	
Light Traffic (100')	50	Private Business Office	
Large Transformer (200')			
	40		Quiet
Soft Whisper (5')	30	Quiet Bedroom	
	20	Recording Studio	
	10		Threshold of Hearing
	0		

**TYPICAL SOUND LEVELS MEASURED IN THE
ENVIRONMENT AND INDUSTRY**

The effects of noise on people can be listed in three general categories:

1. Subjective effects of annoyance, nuisance, dissatisfaction.
2. Interference with activities such as speech, sleep, learning.
3. Physiological effects such as startling, hearing loss.

The levels associated with environmental noise, in almost every case, produce effects only in the first two categories. Workers in industrial plants can experience noise in the last category. Unfortunately, there is as yet no completely satisfactory way to measure the subjective effects of noise, or of the corresponding reactions of annoyance and dissatisfaction. This is primarily because of the wide variation in individual thresholds of annoyance, and habituation to noise over differing individual past experiences with noise.

Thus, an important way of determining a person's subjective reaction to a new noise is the comparison of the existing environment to which one has adapted: the so-called "ambient" noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by the hearers.

With regard to increases in A-weighted noise level, knowledge of the following relationships will be helpful in understanding this report.

1. Except in carefully controlled laboratory experiments, a change of 1 dB cannot be perceived.
2. Outside of the laboratory, a 3 dB change is considered a just-perceivable difference.
3. A change in level of at least 5 dB is required before any noticeable change in community response would be expected.
4. A 10 dB change is subjectively heard as approximately a doubling in loudness, and would almost certainly cause an adverse change in community response.

Existing Noise Environment

Traffic is the most significant source of noise in Novato. U.S. Highway 101 and State Route 37 are the loudest sources. Aircraft operations at Gness Field also contribute to the noise environment.

A noise monitoring survey was conducted in order to quantify existing noise levels along major roadways and determine the hour-by-hour variation in noise levels. Noise measurements were conducted over a 24-hour period at four locations indicated as A, B, C and D. Results of these measurements are shown in Figure 17. Short-term spot measurements were conducted at seven additional locations numbered 1 through 7 on Figure 15. These data are summarized in Table 23. A detailed survey of U.S. Highway 101 noise was also completed. Noise measurements were conducted at 12 locations influenced by noise from the freeway simultaneously with measurements at Location A, which was the 24-hour measurement conducted adjacent to the freeway. These measurement locations are designated A1 through A12 on Figure 15. The measured noise levels at Location A and the corresponding levels measured at each of the satellite locations are shown in Table 24. It can be seen that freeway noise levels vary widely, depending upon the terrain immediately adjacent to the freeway. Where hills shield the freeway noise, noise levels are substantially lower than where there is a direct exposure to the freeway noise. The Nave Boulevard soundwall also substantially reduces noise levels at land uses immediately behind it.

Table 23

15-Minute Noise Measurements

Location	Description	Date	Start Time	L_{eq}	L_{max}	L_{10}	L_{50}	L_{90}	Estimated L_{dn}	Comments
1	End of Topaz Dr. by recreation area	5/17/93	12:30 pm	39	51	42	33	33	40	Only significant noise sources are propeller aircraft from Gness Field
2	50 ft. from the center of Olive Ave.; corner with 2nd St.	5/17/93	1:10 pm	53	66	58	46	40	55	Mostly noise from traffic on Olive Ave.
3	50 ft. from the center of Grant Ave.; on Marion Park grounds	5/17/93	1:30 pm	57	67	61	54	49	59	Mostly Grant Ave. traffic noise; some noise from the shopping center across the street
4	50 ft. from the center of S. Novato Blvd.; corner with Oliva Dr.	5/17/93	2:00 pm	65	78	68	63	56	65	Exclusively traffic noise from S. Novato Blvd.
5	50 ft. from the center of Sutro Ave.; corner with Dominic Dr.	5/17/93	2:25 pm	57	70	62	48	42	58	Mostly noise of traffic on Sutro Ave.
6	100 ft. from the center of Indian Valley Rd.; corner with Chamberlain Ave.	5/17/93	2:45 pm	52	62	55	49	44	53	Only noise from traffic on Indian Valley Rd.
7	100 ft. from the center of Highway 37; west of Atherton Ave.	5/18/93	4:05	73	81	76	72	66	74	Traffic on Hwy. 37 dominates the noise environment

Table 24
U.S. Highway 101 Noise Survey
May 17, 1993

Location		A-Weighted Level (dBA)		
		Measured L_{eq} (5 min.)		L_{dn} @ Site
		A	Site	
A1)	Crossroads Court	72	65	69
A2)	End of Redwood Blvd.	74	66	68
A3)	End of Village Circle	73	59	62
A4)	Redwood Blvd. @ Oak Crest Ct.	73	59	62
A5)	End of Redwood Blvd.	73	64	67
A6)	Park Crest Court	72	48	52
A7)	Redwood Blvd. @ Cutlass Dr.	73	59	62
A8)	Calle Arboleta @ Via Herbosa	72	54	58
A9)	End of Madrid Court	73	56	59
A10)	Alameda Del Prado	73	56	59
A11)	Marin Valley Drive	75	60	61
A12)	Nave Drive	75	60	61

Note: Existing L_{dn} @ Location A = 76 dB

B. Impacts and Mitigations

Criteria Used to Determine Significance

A project will have a significant impact if it:

1. Causes a substantial increase in noise.
2. Has a 3 dBA increase in noise along a major roadway.

The Safety and Noise Chapter of the Draft General Plan is a mitigating Element of the Plan. The potential impacts associated with the Draft General Plan Buildout include:

1. An increase in traffic noise on the roadway network resulting from increased development.
2. The potential siting of noise sensitive land uses in areas where noise levels are not compatible with the intended use.

Impact 4.7-A The proposed buildout of the Draft Plan would result in a substantial increase in noise levels along certain roadway segments. This is considered a potentially significant impact.

Noise levels along roadways in Novato were calculated for the existing (1995) condition and for the Draft Plan (2010). The results of these calculations are shown in Table 25. Traffic noise levels were calculated using Federal Highway Administration (FHWA) Method FHWA RD-77-108. CEQA indicates that a substantial increase in noise at a sensitive receptor constitutes a significant adverse effect. A comparison of the L_{dn} noise levels 50 feet from the roadway centerline, shown in Table 25, indicates that along most roadways in Novato noise levels will not change substantially. The exceptions are Atherton Avenue from U.S. Highway 101 to State Route 37 which is expected to experience a 5 dB increase, Nave Drive (although land uses adjacent to it are commercial), Olive Avenue from Redwood Boulevard to east of Highway 101, and Redwood Boulevard; each of these is expected to increase by 3 dB. A 3 decibel increase is also expected on State Route 37, but this results from the cumulative development in the Bay Area and is not attributable to growth in Novato.

The projected noise contours described on Figure 17 indicate that most of the City's streets will experience relatively minor increases in noise levels. Portions of several streets and highways listed below currently experience noise levels of 60 dB L_{dn} , or above :

- Atherton Avenue from Highway 101 to Highway 37
- Nave Drive
- Olive Avenue from Redwood Boulevard to east of Highway 101
- Redwood Boulevard from San Marin Drive to De Long Avenue
- De Long Avenue from Highway 101 to South Novato Boulevard
- Diablo Avenue, from South Novato Boulevard to Center Road
- Ignacio Boulevard from Alameda Del Prado to Sunset Parkway
- Novato Boulevard from San Marin Drive to Diablo Avenue
- South Novato Boulevard from Diablo Avenue to Rowland Boulevard
- Rowland Boulevard from Highway 101 to South Novato Boulevard
- San Marin Drive from Highway 101 to Novato Boulevard
- Simmons Lane from San Marin Drive to Novato Boulevard
- Sunset Parkway from South Novato Boulevard to Ignacio Boulevard
- Sutro Avenue from Novato Boulevard to Vineyard Road
- Wilson Avenue from South Novato Boulevard to Vineyard Road
- US 101 in the Novato Planning Area.

It is anticipated that new residences in areas adjacent to the above streets may be exposed to excessive noise levels, defined as those above 60 dB L_{dn} . A review of the major development sites shown on Figure 3 indicates that portions of many of these sites are in areas that will be exposed to future noise levels exceeding 60 dB L_{dn} . For example, at least portions of Sites 4-6, 8, 11, 16, 18-25, 30-32, and 39 would be within this noise contour. These sites include about 900 acres with the development potential for about 900 new units and 2,800,000 square feet of non-residential space. However, only a portion of this development potential would be within the area that will experience severe noise.

Mitigation Measures Proposed by the Draft General Plan

The Safety and Noise Chapter of the Draft General Plan contains programs and policies which assess the significance of increased traffic noise and require mitigation measures for projects which result in these impacts. These policies and programs include:

SF Objective 11 Ensure compatibility of new development with existing and future noise levels.

SF Objective 12 Prevent land uses which increase the noise level above acceptable standards or require mitigation to reduce noise to acceptable levels.

SF Objective 13 Reduce noise to acceptable levels where it now exceeds those standards whenever possible.

SF Policy 36 Maintain Noise and Land Use Compatibility Standards: Encourage the maintenance of the noise and land use compatibility standards indicated in SF Table 3. The normally acceptable standards for outdoor noise are summarized below [noise measurements in L_{dn}]:

<i>Residential Development</i>	<i>up to 60 dB</i>
<i>Transient Lodging: Motel and Hotel</i>	<i>up to 60 dB</i>
<i>School, Library, Church, Hospital and Nursing Home</i>	<i>up to 60 dB</i>
<i>Auditorium, Concert Hall, Amphitheater, Sports Arena</i>	<i>up to 70 dB</i>
<i>Sports Arena, Outdoor Spectator Sports</i>	<i>up to 75 dB</i>
<i>Playgrounds, Neighborhood Parks, Open Space</i>	<i>up to 70 dB</i>
<i>Golf Course, Cemetery</i>	<i>up to 70 dB</i>
<i>Office Building, Business, Commercial & Professional</i>	<i>up to 65 dB</i>
<i>Industrial, Manufacturing, Utilities</i>	<i>up to 70 dB</i>

SF Program 36.1: Review all land use and development proposals for compliance with the Noise and Land Use Compatibility Standards.

SF Program 36.2: Use a standard of L_{dn} 45 dB for indoor noise for all new residential development, including hotels and motels.

SF Program 36.3: Use the standards in SF Table 2 to determine the need for noise studies and require new developments to provide noise attenuation features as a condition of approving new projects.

SF Program 36.4: Require an acoustical study for all new residential projects with a future L_{dn} noise exposure of 60 dB or greater as shown on SF Map 7 [Figure 16] The study shall describe how the project will comply with the Noise and Land Use Comparibility Standards.

SF Program 36.5: Require post-construction testing and sign-off by an acoustical engineer for residential, school, library, church, hospital, nursing home and office projects exposed to an L_{dn} in excess of 65 dB to ensure compliance with applicable exterior and interior standards contained in the Noise and Land Use Compatibility Standards.

SF Program 36.6: Do not permit new residential development within the 60 dB CNEL contour for Gness Field as shown in SF Map 8. An acoustical investigation and noise insulation shall be considered for residential development near to Gness Field within the 55 CNEL contour shown in SF Map 8.

SF Program 36.7: Consider developing a comprehensive noise ordinance to address construction noise and other local noise issues.

SF Program 36.8: Consider and carefully evaluate the noise impacts of all streets and public facilities projects.

SF Program 36.9: Continue to seek state and federal funding for noise mitigation.

SF Policy 37: Mitigate Noise Impacts: Mitigate noise exceeding standards to the maximum feasible extent.

SF Program 37.1: Require acoustical studies and mitigation measures for new developments and roadway improvements which affect noise sensitive uses such as schools, hospitals, libraries and convalescent homes.

SF Program 37.2: Work with Caltrans to ensure that adequate noise studies are prepared and alternative noise mitigation measures are considered in State projects and request that Caltrans obtain City concurrence prior to initiating any noise mitigation project in Novato.

SF Program 37.3: Continue to restrict truck traffic to designated routes.

SF Program 37.4: Continue to enforce California Vehicle Code § 23130, 23130.5, 27150, 27151 and 38275. These sections pertain to allowable noise emissions of vehicles operated on public streets.

Additional Mitigation Measures Suggested

While these policies and programs of the Draft General Plan reduce the cumulative noise levels for new development, it is unclear whether they address noise issues in existing residential neighborhoods. SF Policy 37 requires mitigation of noise where it exceeds standards, but the programs under that policy do not seem to specify addressing residential areas. To clarify this matter and ensure that the Draft Plan adequately reduces noise impacts to existing residential neighborhoods, the following program should be added to SF Policy 37:

SF Program 37.5: Investigate mitigation measures for projects that would cause a substantial increase in noise (i.e., cause the L_{dn} to increase above 60 dBA or cause an

increase of 5 dBA L_{dn} or more in the noise environment) in adjacent residential areas or in residential areas affected by traffic generated by the proposed project.

The addition of this program will reduce the cumulative noise impacts to a level that is less than significant. No additional mitigation measures are required.

Impact 4.7-B New development may be proposed in areas which have an incompatible noise environment. This is a potentially significant impact.

The future noise exposure levels for the City of Novato are shown in Table 25. The Safety and Noise Chapter of the Draft General Plan also contains noise contour maps showing the City's noise exposure for the year 2010 resulting from vehicular traffic noise and aircraft noise from Gness Field. The Safety and Noise Chapter adopts land use compatibility guidelines for community noise in Novato. If land uses are proposed within areas where the noise environment is higher than that considered normally acceptable, this would result in a significant noise impact. For example, a residential project proposed where the L_{dn} exceeds 60 dB or an office building proposed in an area where the L_{dn} exceeds 70 dB would be required to have a combination of noise-mitigating features, such as additional noise insulation, building setbacks, noise barriers, or other measures as indicated by an acoustical study.

Mitigation Measures Proposed by the Draft General Plan

The Safety and Noise Chapter of the Draft General Plan contain policies and programs to provide for a compatible noise environment. These policies and programs were listed under Impact 4.7-A above.

Additional Mitigation Measures Suggested

These Draft General Plan programs and policies ensure that new development is not subjected to significant noise levels; they will mitigate this potential impact to a less than significant level. No additional mitigations are required for the cumulative impact.

Table 25

Existing and Future (Draft General Plan)
Traffic Noise Levels

NOVATO								Ldn NOISE					
		SPEED			TRUCK%			Ldn @ 50'	CONTOUR DISTANCE (FEET)				
		=====			=====				=====				
ADT		AU	MT	HT	MT	HT	80		75	70	65	60	
1 ATHERTON AVE													
FROM: US 101													
EXISTING	6,580	40	40	40	3.0	2.0	66	0	0	0	70	169	
FUTURE	18,530						71	0	0	62	157	338	
TO: State Route 37													
2 DE LONG AVE													
FROM: US 101													
EXISTING	16,720	35	35	35	5.0	2.0	70	0	0	46	129	278	
FUTURE	31,550						72	0	28	87	197	424	
TO: So. Novato Blvd.													
3 DIABLO AVE													
FROM: So. Novato Blvd.													
EXISTING	7,890	25	25	25	5.0	2.0	64	0	0	0	37	111	
FUTURE	7,890						64	0	0	0	37	111	
TO: Center Rd.													
4 IGNACIO BLVD													
FROM: Alameda Del Prado													
EXISTING	7,050	35	35	35	4.0	1.0	65	0	0	0	50	136	
FUTURE	9,000						66	0	0	0	64	160	
TO: Sunset Parkway													
FROM: Sunset Parkway													
EXISTING	3,330	35	35	35	4.0	1.0	62	0	0	0	0	75	
FUTURE	3,330						62	0	0	0	0	75	
TO: West City Limit													
5 NAVE DRIVE													
FROM: Bel Marin Keys													
EXISTING	18,430	35	35	35	3.0	2.0	70	0	0	47	130	280	
FUTURE	42,650						73	0	34	106	227	490	
TO: South													
6 NOVATO BLVD													
FROM: San Marin Dr.													
EXISTING	9,490	35	35	35	5.0	2.0	67	0	0	26	83	191	
FUTURE	14,510						69	0	0	40	117	253	
TO: Diablo Ave.													
7 SO. NOVATO BLVD													
FROM: Diablo Ave.													
EXISTING	14,910	35	35	35	5.0	2.0	69	0	0	41	120	253	
FUTURE	21,810						71	0	0	60	154	332	
TO: Rowland Blvd.													
FROM: Rowland Blvd.													
EXISTING	5,640	35	35	35	5.0	2.0	65	0	0	0	49	135	
FUTURE	6,850						66	0	0	0	60	153	
TO: US 101													
8 OLIVE AVE													
FROM: Redwood Blvd.													
EXISTING	5,940	35	35	35	2.0	1.0	64	0	0	0	38	113	
FUTURE	13,980						67	0	0	29	89	199	
TO: East of US 101													

Table 25 (continued)

		SPEED			TRUCK%		Ldn @ 50'	Ldn NOISE CONTOUR DISTANCE (FEET)					
		=====			=====			=====					
ADT		AU	MT	HT	MT	HT		80	75	70	65	60	
9 REDWOOD BLVD													
FROM: San Marin Dr.													
	EXISTING	10,100	45	45	45	5.0	2.0	70	0	0	47	130	281
	FUTURE	22,300						73	0	33	103	221	476
TO: De Long Ave.													
FROM: De Long Ave.													
	EXISTING	8,220	45	45	45	5.0	2.0	69	0	0	38	114	245
	FUTURE	15,250						72	0	0	71	171	369
TO: Rowland Blvd.													
10 ROWLAND BLVD													
FROM: US 101													
	EXISTING	14,950	35	35	35	3.0	2.0	69	0	0	38	113	244
	FUTURE	22,180						71	0	0	56	147	317
TO: So. Novato Blvd.													
11 SAN MARIN DR													
FROM: US 101													
	EXISTING	25,140	45	45	45	3.0	2.0	73	0	34	106	228	491
	FUTURE	30,250						74	0	41	120	258	556
TO: Simmons Lane													
FROM: Simmons Lane													
	EXISTING	8,460	35	35	35	3.0	2.0	66	0	0	0	68	167
	FUTURE	9,780						67	0	0	0	79	184
TO: Novato Blvd.													
12 SIMMONS LN													
FROM: San Marin Dr.													
	EXISTING	7,750	30	30	30	2.0	1.0	63	0	0	0	35	107
	FUTURE	8,590						64	0	0	0	39	114
TO: Novato Blvd.													
13 SUNSET PARKWAY													
FROM: So. Novato Blvd.													
	EXISTING	5,580	25	25	25	2.0	1.0	60	0	0	0	0	54
	FUTURE	7,830						62	0	0	0	0	76
TO: Ignacio Blvd.													
14 SUTRO AVE													
FROM: Novato Blvd.													
	EXISTING	6,810	35	35	35	2.0	1.0	64	0	0	0	43	123
	FUTURE	7,340						65	0	0	0	47	130
TO: Vineyard Rd.													
15 WILSON AVE													
FROM: So. Novato Blvd.													
	EXISTING	6,820	35	35	35	2.0	1.0	64	0	0	0	43	124
	FUTURE	7,710						65	0	0	0	49	134
TO: Vineyard Rd.													
16 STATE ROUTE 37													
FROM: US 101													
	EXISTING	28,500	55	55	55	2.0	2.0	76	0	60	153	330	711
	FUTURE	62,500						79	42	120	259	557	1200
TO: East													

Table 25 (continued)

						Ldn NOISE						
		SPEED			TRUCK%		Ldn @ 50'	CONTOUR DISTANCE(FEET)				
ADT		AU	MT	HT	MT	HT		80	75	70	65	60
17 US 101												
FROM: Hamilton Field												
EXISTING	119,000	55	55	55	2.0	3.0	82	86	195	421	906	1952
FUTURE	150,000						83	106	228	491	1057	2278
TO: Ignacio Blvd.												
FROM: Ignacio Blvd.												
EXISTING	133,000	55	55	55	2.0	3.0	83	96	210	453	976	2103
FUTURE	177,000						84	118	254	548	1181	2544
TO: State Route 37												
FROM: State Route 37												
EXISTING	109,000	55	55	55	2.0	3.0	82	79	184	397	855	1841
FUTURE	140,000						83	101	218	469	1010	2176
TO: Rowland Blvd.												
FROM: Rowland Blvd.												
EXISTING	95,000	55	55	55	2.0	3.0	81	69	168	362	780	1680
FUTURE	122,000						82	88	198	428	921	1985
TO: De Long Ave.												
FROM: De Long Ave.												
EXISTING	79,000	55	55	55	2.0	3.0	81	57	149	320	690	1486
FUTURE	102,000						82	74	176	380	818	1762
TO: Atherton Ave.												

4.8 AESTHETICS

A. Setting

The definition of what constitutes an aesthetic resource is necessarily subjective. This EIR relies on the City's definition of those resources as presented in the *Existing Conditions Report* prepared by the City. The following is the complete description of those resources as presented in Chapter 7 of that report.

Visual and aesthetic resources can be identified in part by documents previously prepared (especially those that received community comment and input) and observations and identification of physical attributes of the community. The reality, though, is that aesthetic resources must be identified by the community itself, based on its values, its perspective, and its vision. As a result, this section only partially defines and identifies these resources. The public participation process that will ensue as part of the General Plan Revision will be crucial to completing this section, and, ultimately, providing a basis for the City's Aesthetics Chapter.

Aesthetic Resources

There are a number of elements that contribute to the aesthetic environment, including vegetation, tree cover, ridgelines, valleys, creeks, natural outcroppings, and shoreline. Natural features and resources have shaped both the growth and form of Novato, and provide many of the appealing characteristics of the area. The natural environment, scenic and cultural factors contribute to Novato's quality of life. The City of Novato has a unique mixture of traditional rolling California hills covered with oaks and open expanses of agricultural fields and pastures. Homes are nestled in the small canyons that form between the ridges, thus largely protecting views of the hillsides. Some of the most significant visual features bordering Novato Valley are Mt. Burdell to the north, Petaluma River/San Pablo Bay to the east and Big Rock Ridge to the south.

Agricultural and Open Space Lands

The Novato area is framed by a network of agricultural and open space lands. Agricultural operations are primarily grass, hay, and pasture land located around the edge of the Novato area. The majority of the agricultural land is located to the east of the City, where it runs into San Pablo Bay, which creates an open, expansive feel to the east of the City. There are grazing lands north, east, and west of the City. The open space lands include parkland as well as public and private open space areas. The open spaces within the Novato Planning area are identified below.

Ignacio Valley and Indian Valley Open Space Preserves form the southwestern edge; Verissimo Hills Open Space Preserve, O'Hair Park Site and Mt. Burdell Open Space Preserve form the northwestern edge; Pacheco Valley and Loma Verde form the southeastern edge, while Petaluma River and San Pablo Bay form the eastern and northeastern edges. Immediately beyond the mapped Planning Area are a number of open space areas as well - Indian Tree Open Space Preserve (west), Stafford Lake (northwest), Rancho Olompali State Historic Park (north), Lucas Valley Open Space Preserve (southwest), open space areas owned by Lucas Valley Homeowners Association and Marinwood Community Services District (south). The result is a community surrounded by open space, that is physically and visually self-contained.

Water-oriented open space also contributes to the visual impact of Novato due to its numerous creeks, Petaluma River at the northeastern edge, and the presence of San Pablo Bay at the southeastern corner of the Planning Area. Within the Novato community itself, a number of creeks provide water-oriented open space. Novato Creek flows through the Novato Valley and the City of Novato to San Pablo Bay. Several miles west of the town, Novato Creek is pooled behind Stafford Dam in Stafford Lake which serves as a water supply reservoir. Other creeks are the Bowman Canyon Creek which converges with Novato Creek in the northwest portion of the Planning Area; Arroyo Avichi Creek, Arroyo San Jose Creek, and Pacheco Creek run in the southern portion of the plan area. Smaller creeks in Novato basin are Simmons, Bowman Canyon, and Pacheco Creeks. Novato Creek is a tidal estuary south of U.S. Highway 101 to its mouth at San Pablo Bay. The Novato Creek Marsh is approximately 130 acres in size. The creeks that flow through the City of Novato contribute significantly to the feeling of a small, peaceful town.

Formal Park Lands

Chapter 29 of the *Existing Conditions Report*, Parks and Recreation, identifies the formal park lands in the City of Novato. The City of Novato has an extensive park system that adds to the character of the city. Park lands provide recreational opportunities and additional open space. Parks, additionally, provide visual relief in a city.

Significant Ridgelines

As part of the open space network, Mt. Burdell, located north of the City of Novato, is the most significant landmark. Big Rock Ridge forms the southern edge of the Planning Area at an elevation of about 1,400 feet. A series of canyons stretch into the western edges of the Planning Area, following creek corridors. The Novato Planning Area contains many ridges which are a significant focal point for the City of Novato. The small ridgelines play an equally important role as the large ridges in providing visual barriers from one residential area to the next.

Viewsheds and Significant Views

Viewsheds and Significant Views can be determined from major roadways, open space areas, and homes where many people currently enjoy beautiful views. The 1973 General Plan called for designation of Highway 37 as a State Scenic Highway; however, the City never pursued the designation. In 1981, the City of Novato adopted a Scenic Highways Chapter which established that there were some scenic roadways through Novato, however the County has not filed any applications to designate any routes as scenic with the State of California.

Novato has established four roads to be identified as locally-defined scenic routes for planning purposes. The four roads are the following:

1. Highway 101
2. Atherton Avenue
3. Novato Boulevard from San Marin Drive to the westerly Planning Area boundary
4. Highway 37

Highway 101 provides the major visual experience of Novato for thousands of freeway users with views of wetlands, agricultural uses, and the ridgeline to the west bordering the

urban development. Atherton Avenue, Novato Boulevard, and Highway 37 are scenic routes passing through rural areas which provide the entry-point views for Novato.

Figure 18 depicts scenic resources as identified in the 1981 General Plan and General Plan EIR, as revised by City staff. Designated scenic areas were developed on the basis of City staff's experience with Novato and its environs (Westfall, personal communication).

Community Entry Points

Two major highways lead to, or travel through, Novato: US 101, a north-south corridor, connects San Francisco with Sonoma County and points farther north, and State Route 37 terminates in Novato from areas eastward, the closest community being Vallejo. The view traveling from the north on Highway 101 is of wetlands and Gness Field to the east and Mt. Burdell to the west. Traveling from the south, on the east is St. Vincent's and on the west is urban development bounded by undeveloped ridgelines. Traveling from the east on Highway 37, the view is of agricultural uses with Black Point to the north. Other major community entry points are Novato Boulevard, Atherton Avenue, and Olive Avenue. Novato Boulevard enters on the west with Doe Hill and O'Hair Park on the south and the Brookside Property on the north. Atherton and Olive Avenues provide views of rural residential use from the northeast.

Existing Regulations

The *Existing Conditions Report* describes policies in the *Marin Countywide Plan* aimed at protecting aesthetic resources in unincorporated areas adjacent to Novato, particularly policies regulating development in the bayfront conservation zone. The *Existing Conditions Report* describes in detail existing General Plan policies regulating development on hillsides and ridgelines. It also describes development standards included in the City's Zoning Ordinance relative to signing regulations, historic preservation zoning, heritage tree protection and general development standards. Ordinances have been adopted that address the physical and visual form of the community: trees and shrubs - regulating removal on private property, heritage trees preservation, tree care in public places; establishing a design review committee; establishing a downtown revitalization committee; development standards regulating grading, landscaping, requiring sidewalks, underground utilities, and solid waste disposal. Finally, the report summarizes current design review guidelines that have been adopted in the City.

B. Impacts and Mitigations

Criteria Used to Determine Significance

A project will have a significant impact if it:

1. Substantially alters the backdrop of undeveloped scenery and/or obstructs views of significant natural features from major public vantage points.
2. Substantially clashes with the existing style, scale, and character of the area.
3. Results in a net loss of designated open space lands.
4. Creates an aesthetically offensive site open to public view.

Impact 4.8-A **Future development, unless carefully sited and designed, may be inconsistent with the existing scale, style, and character of existing development in the surrounding area. This development could result in views that are aesthetically offensive.**

New development inevitably transforms existing views. Typically, this change in views will be perceived as adverse by some to many members of the public. Unless carefully sited and designed, new development has the potential to block views of wetlands, scenic hillsides and ridges, and agricultural lands. A comparison of the Major Development Sites shown on Figure 3 with the scenic areas depicted on Figure 18 shows all or portions of Sites 5, 7, 9, 11-15, 18, 21-25, 27, 29, 31-33, 35, and 40 as located within areas that have scenic resources. These sites comprise a total of about 2,471 acres with development potential for as many as 1,700 new residential units and 2,000,000 square feet of non-residential development.

Mitigation Measures Proposed by the Draft General Plan

The Draft General Plan contains numerous policies and programs specifically designed to minimize visual impacts and maintain a high degree of harmony with the environmental setting of the City and the scale and character of existing development. These policies and programs reduce the cumulative impact to a level that is less than significant. Over 50 percent of the City and its SOI will be left undeveloped even if maximum buildout per the Draft General Plan occurs. Wetlands and scenic ridges will be left undeveloped. Provisions to preserve open space and protect wetland areas and ridgelines will preserve the visual framework of the City. Some of the more important specific policies are summarized below. These policies and programs reduce the overall impact to a level that is less than significant. Site-specific impacts on particular views must be assessed during the CEQA review for each site. The policies and programs of the Draft General Plan as well as existing ordinances included in the City Code (Chapters 9, 12, and 14) provide the framework for ensuring that site-specific impacts can also be reduced to a level that is less than significant.

The Environment Chapter includes a number of policies and programs that reduce visual impacts. These policies and programs have already been listed in their entirety in previous sections of this EIR. They are outlined below.

1. EN Policies 1-8 protect vegetation and wildlife habitat along streams via a Watercourse Protection Overlay Zone.
2. EN Policies 9-10 protect wetlands by establishing a Wetland Protection Overlay Zone.
2. EN Policies 11-17 restrict development in low lying areas east of Highway 101 by establishing a Bayfront Overlay Zone.
3. EN Policies 20-22 protect existing agricultural uses.
4. EN Policies 23-26 provide protections for existing woodlands.
5. EN Objective 7 calls for protection of visual values on hillsides and ridgelines. Specific policies under this objective state:

EN Objective 7 Protect visual values on hillsides, ridgelines, and other scenic resources.

EN Map 3 [Figure 18], Scenic Resources, shows areas characterized by the significant ridgelines, hillsides, and other scenic elements that help to form the visual character of Novato and that define community separators. It is important that development be located and designed in such a way that these resources are protected.

EN Policy 27 Protect Scenic Resources. Protect visual values on hillsides, ridgelines, and other scenic resources.

EN Program 27.1: Consider establishing a hillside and ridgeline protection ordinance. This ordinance would include development standards and measures for hillsides and scenic ridgelines. A slope density regulation which decreases allowable development densities as slope increases would be a practical method to protect hillsides. Refer to the Safety and Noise Chapter for additional policies and programs dealing with development controls for unstable slopes.

EN Program 27.2: Revise the Zoning Ordinance to place all Scenic Resources identified on EN Map 3 in a planned district zoning category, to ensure design for scenic preservation.

6. Land Use Policy 9 establishes the requirement for preparing a Constraints Analysis for all development applications on or adjacent to environmentally sensitive lands. This includes all the scenic lands shown on EN Map 3 (Figure 18).
7. EN Policies 41-43 protect important open space properties.

As regards visual impacts on lands that are not identified as some type of environmentally sensitive area or resource, the Draft General Plan includes policies and programs aimed at minimizing the visual effects of new development. Many of the Community Identity Chapter policies and programs provide design guidelines for the comprehensive evaluation of new development to ensure compatibility with its surroundings. Policies and programs include:

CI Policy 1 Compatibility of Development With Surroundings. Ensure that new development is sensitive to the surrounding architecture, topography, landscaping, and to the character, scale, and ambiance of the surrounding neighborhood.

CI Program 1.1: Establish Design Guidelines to be applied as part of the Design Review process.

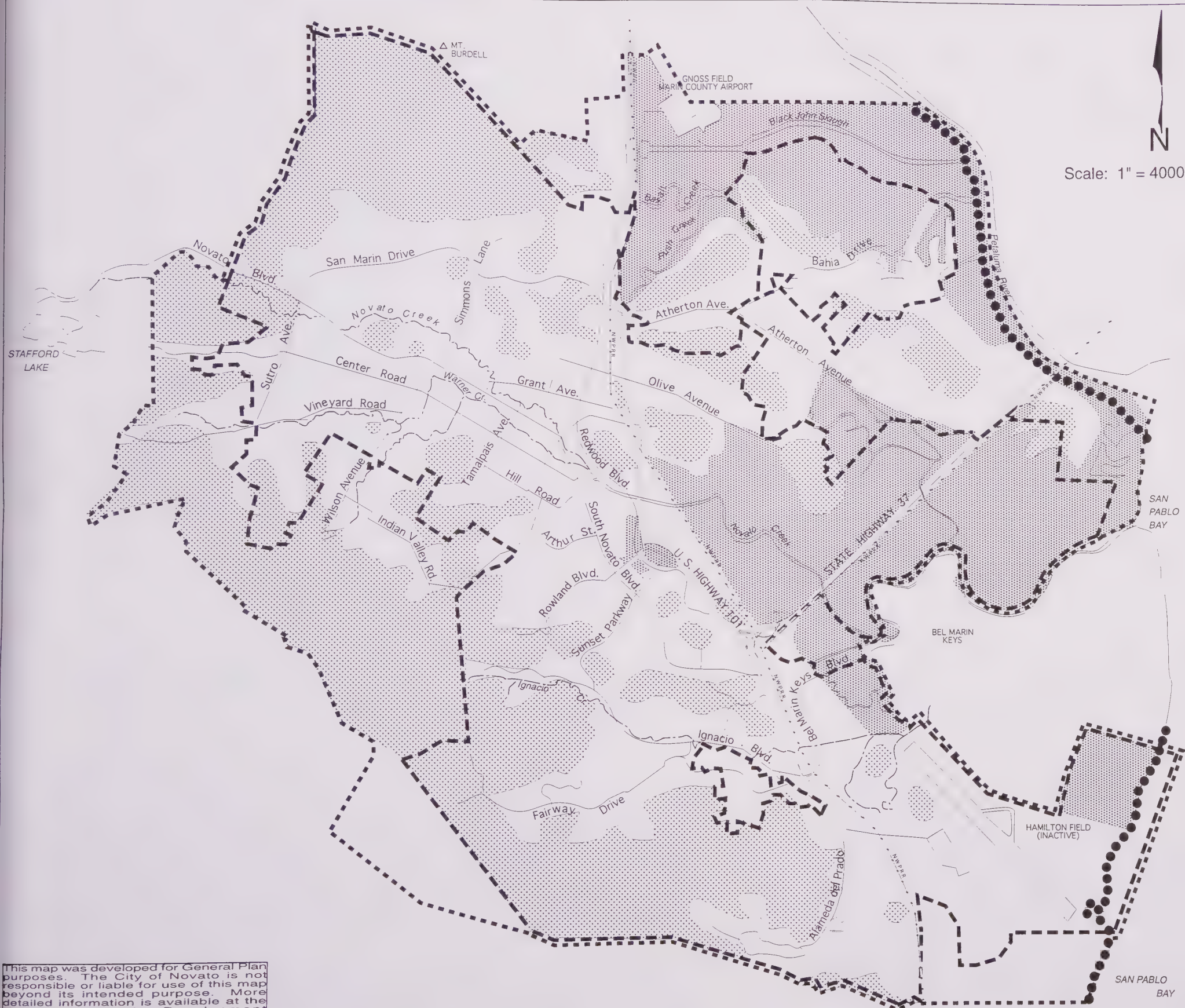
CI Program 1.2: Continue the design review process.

The design review process recognizes the interdependence of land values and aesthetics and provides a method to promote good site planning, building design, and sound land use development.

CI Program 1.3: Adopt specific design guidelines for the Downtown, the North West Quadrant, and for mixed use development.

FIGURE 18

SCENIC AREAS



- Scenic Hills and Ridges
- Other Scenic Areas
- Shoreline

SOURCE: City of Novato General Plan (1981),
Novato Community Development
Department

City of Novato General Plan Revision
Draft
Environmental Report

City Limit Line	Revised & Recirculated
Sphere Of Influence	November, 1995

This map was developed for General Plan purposes. The City of Novato is not responsible or liable for use of this map beyond its intended purpose. More detailed information is available at the Novato Community Development Department.

Novato is primarily a residential community. The character and livability of its neighborhoods define, to a large extent, Novato's sense of place. New residential development must fit in harmoniously with its surroundings, support and enhance the City's identity, without necessarily conforming to any given architectural style or motif.

CI Policy 2: Explore the use of traditional site design and architectural principles in areas with established patterns or sufficiently large development areas to use those principles successfully. Element of traditional site design and architectural include:

- a. grid street systems*
- b. sidewalks with curbs, gutters, and a planting strip between the sidewalk and the roadway*
- c. traditional home designs with porches and verandas*
- d. trees planted adjacent to arterial streets and highways*
- e. narrower traffic lanes on local streets, with limited on-street parking*
- f. rounded street corners with "bulb outs" at key intersections*
- g. absence of large radius intersection corners*

CI Policy 3 Discourage Repetition. Discourage sameness and repetitive designs.

CI Program 3.1: Consider revising the Zoning Ordinance to include the following guidelines:

- a) discourage new residential construction with identical or similar facades on opposing or adjacent lots;*
- b) encourage varied roof styles, reversed building footprints, and changes in elevation for the same unit floor plan.*

CI Policy 6 Landscaping. Encourage attractive native and drought-tolerant, low-maintenance landscaping responsive to fire hazards.

CI Program 6.1: Maintain and periodically update minimum landscape standards.

CI Program 6.2: Maintain a list of drought-tolerant plants for public distribution.

Additional Mitigation Measures Suggested

The policies and programs included in the Draft General Plan substantially reduce the impacts that new development has on views of important visual resources. New development will be guided by policies and programs that require compatibility with the surroundings. There will be a change in views, as this cannot be avoided. The policies and programs outlined above provide the framework for minimizing the visual effects of this new development. However, these policies and programs do not mitigate the cumulative impact to a level that is less than significant. Because views of undeveloped ridgelines are an especially important aesthetic resource, the policies and programs related

to ridgelines and hillsides must be strengthened to avoid future significant impacts. To ensure that these important aesthetic resources are not significantly impacted, the following programs shall be added to Policy 27 of the Environment Chapter.

EN Program 27.3 Prohibit new development within 100 vertical feet of a ridgeline within a scenic area and from protruding above a designated ridgeline as seen from a public right-of-way one-eighth of a mile or more away, unless this would prevent all development on a property.

In addition, the following program is required.

EN Program 27.4 On all open and grassy hillsides, development should be clustered well below the ridge, in the least visually prominent part of the site.

With the addition of these programs, the cumulative impact will be less than significant. Site specific evaluations will be required for each development to ensure that local aesthetic resources are not adversely affected.

Impact 4.8-B Future development may substantially alter views along designated view corridors and/or at visual entry points to the City.

There is the potential for new development along all four locally-defined scenic routes and at most entry points. This development could have significant visual impacts. The following describes these potential effects.

1. Highway 37. Most of the area adjacent to Highway 37 will remain in agricultural use or as some form of open space. The possible exceptions include development potential in the area of Black Point and potential for non-residential development near the western terminus of the highway (Site x) as it approaches the developed portion of Novato. Residential development in the Black Point area could be visible from the highway. Without a site plan, it is not possible to determine visibility. Commercial/industrial development at the western terminus will extend the developed edge of Novato slightly to the east. This development will not significantly extend urban development and is not deemed a significant change.
2. North End of Highway 101. The area east of the highway will remain undeveloped except for the existing airport. West of the highway, there is development potential for non-residential development on Sites 6 and 40. Depending on final site planning, office buildings could be visible from the highway along this northern entry point.
3. South End of Highway 101. The area to the east (Site 34) will remain generally undeveloped. On the west, there is some development potential north of the existing Independent Journal building (Site 31). This non-residential development could be visible from the highway.
4. Central Highway 101. New development will be visible adjacent to the highway as it passes through the center of Novato. There is room for non-residential development on several vacant sites on the east side of the highway that are elevated

above the historic bay line (notably Site 24, the Hanna Ranch site, and Site 20, the site where the Community Hospital is proposed). On the west side of the highway, there are several smaller properties where additional non-residential development could occur. With buildout of all these properties, the views along this central portion of Highway 101 will be more of a typical urban appearance. However, there will still be midground and background views of wetlands to the east and undeveloped ridgelines in all directions.

5. West End of Novato Boulevard. Doe Hill was acquired by the County Open Space District as this EIR was being published so that views to the south will remain unchanged. On the north, there is very limited development potential for the Brookside Property (Site 2 located immediately west of San Marin High School).
6. Atherton Avenue. There is the potential for very low density residential development along portions of Atherton Avenue. The land use designations along this road will ensure that open views or views of large lot residential development will persist. However, there will be some loss of open space character.
7. Olive Avenue. The Land Use Designations Map designates the western end of Olive Avenue for single-family residential development, maintaining the existing character of the neighborhood. The northeast end of Olive is designated for large lot residential or conservation.

In general, the Draft General Plan maintains existing views at key entry points and along scenic routes. However, there is the potential for some development that could transform existing open space views as catalogued above. If future development on these sites is not designed to minimize effects on views from these key vantage points, the development could have a significant impact.

Mitigation Measures Proposed by the Draft General Plan

The previously cited policies and programs included in the Environment Chapter related to protecting woodlands, the bayfront corridor, and scenic hillsides and ridgelines will minimize visual impacts at the entryways. The Land Use Chapter requires a Constraints Analysis for development in locations with sensitive resources, including visual resources. A review of Figure 18 which shows the identified scenic areas shows that most important visual resources at entryways and along scenic routes will be subject to a Constraints Analysis. In addition, any future development will be subject to the policies and programs included in the Community Identity Chapter. These policies and programs will reduce the impact on entryways to a level that is less than significant with the exception of two entryways on Highway 101.

Additional Mitigation Measures Suggested

The two entryways that require additional protection would be the Highway 101 north entry on the west side of the freeway and the Highway 101 south entryway on the west side of the freeway. To mitigate potentially significant effects on these entryways, the following program shall be added to Land Use Policy 9:

LU Program 9.3: All development along the west side of the freeway from the northern edge of the City to Atherton Avenue and from the southern edge of the City to Ignacio Boulevard shall be subject to the requirement to prepare a Constraints Analysis as part of any development application.

This additional mitigation ensures adequate mitigation of this impact. With this addition, the policies and programs in the Draft General Plan will reduce the cumulative impact to a level that is less than significant. No additional mitigation is required.

Impact 4.8-C Future development will potentially generate increased light and glare.

All of the potential development assessed in the previous impacts will include new lighting. Street, business, and residential lighting will affect night-time views. Areas that are currently dark or have a light sprinkle of lights could be transformed to areas with typical urban lighting. The effects would be particularly noticeable along scenic routes and at key entry points. This is a potentially significant impact

Mitigation Measures Proposed by the Draft General Plan

The Community Identity Chapter includes a policy to regulate lighting. This policy is listed below.

CI Objective 6 Improve the appearance and effectiveness of outdoor lighting and reduce conflicts related to lighting.

CI Policy 11 Lighting Design Guidelines. Consider amending the Zoning Ordinance to incorporate design guidelines for exterior lighting addressing issues such as security, appearance and intensity.

Additional Mitigation Measures Suggested

It is recognized that potential lighting impacts are currently assessed during design review and CEQA review of projects. Policy 11 lacks any design guidelines. As such, it cannot be stated that the Draft Plan adequately addresses this impact. The policy should be reworded to state:

CI Policy 11 Lighting Design Guidelines. Amend the Zoning Ordinance to incorporate design guidelines for exterior lighting addressing issues such as security, appearance and intensity. The guidelines shall provide the types of lights and lighting to be used in various types of development so that new projects do not substantially adversely affect views of open space or other valuable City views.

This addition will effectively reduce the overall impact to a level that is less than significant. No additional mitigation is required for the cumulative impact. Specific impacts of each new development must be assessed per the guidelines established by these policies.

4.8-D The construction of future sound walls along Highway 101 and the construction of other public facilities (e.g. power lines) will alter existing views.

Chapter 12-1 of the City Code already requires the extension of electric, telephone, and cable television lines to be placed underground. Thus, there will be no visual impact from extension of these services. The construction of sound walls along Highway 101 would affect views along this corridor. Sound walls that have been constructed in the past have been perceived as having significant aesthetic impacts by certain members of the public. Additional walls would be an extension of this potentially significant impact.

Mitigation Measures Proposed by the Draft General Plan

The Community Identity Chapter contains a policy (CI Policy 8) that requires undergrounding of power lines. However, there is no policy related to the issue of sound walls. The Safety and Noise Chapter contains Program 37.2 which states that the City will work with Caltrans to consider noise mitigation alternatives and request Caltrans obtain City concurrence prior to initiating any noise mitigation project.

Additional Mitigation Measures Suggested

The City shall request that Caltrans perform a visual analysis for all new, proposed soundwalls in Novato. The analysis shall show existing and future views at critical points along the route. These data will be used to determine whether the sound walls should be constructed. This additional mitigation will reduce this impact to a level that is less than significant. The specific impacts resulting from specific sound walls must be addressed as part of the review of those projects. The requirement for a visual analysis provides the framework for reducing project-specific impacts to a level that is less than significant. However, it is noted that Caltrans is not required to perform this visual analysis. The sound walls could be constructed regardless of visual effects. These walls could have a significant impact. However, these sound walls are not recommended in the Draft General Plan, and control of construction of these walls (and this impact) does not rest with the City. As such, these walls are not an impact of this project. No additional mitigation is required.

4.9 WASTEWATER COLLECTION, TREATMENT, AND DISPOSAL

This section was reviewed for accuracy by the Novato Sanitary District.

A. Setting

A full discussion of the wastewater collection, treatment, and disposal facilities is contained in Chapter 18 of the *Existing Conditions Report*. The following is a summary of that longer discussion.

The collection, treatment, and disposal of wastewater within the Novato General Plan's Sphere of Influence is performed by the Novato Sanitary District (NSD), who owns and operates the system's facilities and controls the design, construction, maintenance and testing/monitoring activities for all existing and future development. NSD is required by Federal and State law to meet certain standards and requirements regarding the quality and quantity of waste discharge. These legislative mandates are embodied in a permit to NSD issued by the San Francisco Region of the California Water Quality Control Board under the National Pollution Discharge Elimination System (NPDES). The current permit was issued in August, 1992 and will expire in August, 1997. NSD will apply for a new NPDES permit in February, 1997.

Wastewater is collected in a sewer system operated by the Novato Sanitary District. This collection system transports wastewater to one of two treatment facilities: the Ignacio Treatment Plant or the Novato Treatment Plant.

The Ignacio Treatment Plant receives wastewater from the District's sewer mains flows via gravity and from the Bel Marin Keys and East Hamilton pumping stations; there are also various lift stations throughout the wastewater collection system. The treatment process includes primary clarification, biofiltration, secondary clarification, nitrification, gravity filtration and disinfection. After treatment, the effluent is pumped to combine with the Novato Treatment Plant effluent for discharge to San Pablo Bay or to the reclamation site during the summer months.

The Novato Treatment Plant also receives wastewater via gravity sewer mains and from the Bahia Pumping Station; there are also various lift stations throughout the wastewater collection system. The treatment process at the Novato Plant includes primary clarification, activated sludge (the production of an activated mass of microorganisms capable of stabilizing a waste aerobically), secondary clarification, nitrification, and disinfection. After treatment, the effluent is pumped to combine with the Ignacio Treatment Plant effluent for discharge to San Pablo Bay or to the reclamation site.

The Ignacio Plant has a design capacity of 2.02 million gallons per day (mgd). In 1994, the Average Dry Weather Flow (ADWF) was 1.62 mgd. The Novato Plant has a design capacity of 4.53 mgd (ADWF). In 1994, the ADWF at this plant was 3.2 mgd.

The *Existing Conditions Report* states that the Novato Treatment Plant has adequate capacity to meet projected future needs. The Ignacio Treatment Plant currently operates within its treatment capacity but will require expansion to meet future requirements. The treated effluent from the two plants are combined prior to discharge. The combined effluent meets all treatment requirements.

Disposal

Treated wastewater from the Novato and Ignacio Treatment Plants is discharged to a reclamation facility located on both sides of Highway 37 east of Highway 101, typically from May through September; discharge to the San Pablo Bay is prohibited from June 1 through August 31. The remainder of the year, it is discharged to San Pablo Bay.

The reclamation facility includes 820 acres utilized as pasture land, 14.4 acres of dedicated land for digested sludge disposal, a 10-acre wildlife pond, 53 acres of mitigation area, two effluent storage ponds (one 34 acres and the other 30 acres for a capacity of 179 million gallons) and 100 acres of roads, structures and drainage ditches. Support facilities include an irrigation pump station, two drainage pump stations, and an irrigation distribution/spray system. Effluent is pumped from the storage ponds to irrigate the pasture lands; the crop is harvested and sold as hay, or it is consumed on site by cattle.

Digested sludge (the waste material from the treatment process) from the Novato Plant is pumped to sludge lagoons at the reclamation site for holding and thickening. Thickened sludge arrives by truck from the Ignacio Plant to be spread along with the Novato Plant thickened sludge onto the 14.4-acre dedicated sludge disposal site.

According to a 1992 capacity study done for the District, the reclamation/disposal facility has met all design objectives and its components – including the 179 million gallon capacity holding ponds, 820-acre pasture lands, irrigation system, decant return, four sludge lagoons (3.2 million gallons in capacity) and 14.4-acre dedicated sludge disposal land – are adequate for current needs.

Costs for Infrastructure Improvements

The cost estimates of infrastructure for new development are generated on a site-by-site basis along with the construction plans and specifications. The cost for NSD services to grant and approve the permit are in accordance with the provisions in the Sanitary Code of the Novato Sanitary District and typically run about 3 percent of the construction cost. Cost for new service connection is determined by NSD regulation as prescribed in the Sanitary Code and currently is \$3,310 per dwelling unit and escalates 5 percent annually. The current cost of operating and maintaining the sanitary sewage system (i.e. sewer service charges) for fiscal year 1994-1995 was \$118 for a typical single family residential homeowner. It is noteworthy that NSD's rate is significantly lower than 15 of the 16 other Bay Area sanitation agencies sampled which range from \$106 to \$521 per typical dwelling. Priority for site development is established on a first come-first served basis and is totally dependent on the developer's abilities to complete all requirements essential for project approval, construction, and acceptance by NSD.

B. Impacts and Mitigations

Criteria Used to Determine Significance

A project will have a significant impact if it:

1. Generates additional wastewater that exceeds the existing or planned capacity of the sewage treatment and disposal system.

2. Requires sewer system improvements (including upgrading of collectors) for which there is no planned method of financing and constructing.

Impact 4.9-A Future development will generate wastewater that must be treated by the existing treatment facilities.

Development of all vacant or underdeveloped properties will generate new wastewater. NSD does not currently have sufficient capacity to meet projected wastewater treatment and disposal demand. In order to meet projected wastewater service treatment demands in 2010 and provide a margin of safety against any emergency, the NSD plans and considerations are as follows:

System Capacity

The District's existing NPDES permits allow a maximum discharge of up to 6.55 mgd (ADWF). According to a recent study completed in 1994 by NSD, there is sufficient capacity to meet all wastewater service demands to the year 2010. However, recent discussions with NSD staff indicate that buildout under the Draft General Plan may include more development than foreseen in that 1994 study. NSD staff has not determined whether further additions to the system will be required.

Permit Requirements

To adequately accommodate the Draft General Plan treatment requirements, it is necessary to modify the current NPDES permit to reallocate 500,000 gallons per day of ADWF capacity from the Novato Treatment Plant to the Ignacio Treatment Plant. This change will allow the expansion of the Ignacio Plant. The regulatory process necessary to effect this re-allocation has already been initiated with the Regional Water Quality Control Board by NSD.

Plant Expansion

The District must expand the Ignacio Treatment Plant to accommodate the growth allowed under the Draft General Plan. Current District projections indicate the Ignacio Treatment Plant must be expanded to a design capacity of at least 2.55 mgd (ADWF) to accommodate projected growth.

Disruption of Service

Disruption of service is possible for many reasons. NSD has taken steps to assure continuity of service by such actions as:

1. Constant review and upgrading of system facilities to assure reliability.
2. Careful design and construction of all facilities to industry standards to avoid potential loss of service due to flood, earthquake, sabotage, vandalism or other hazards.

3. Acquisition and maintenance of an adequate supply of back-up generators, pumps, etc. to maintain a high degree of confidence of operation during potential power outages.

Public Health and Safety

1. NSD carefully monitors and tests the quality of its treatment process and effluent in accordance with State and Federal regulations.
2. To assure that pollutants which cannot be adequately treated are not discharged into the system, the Sanitary Code of the Novato Sanitary District contains pre-treatment requirements along with both general and specific limitations which regulate and/or prohibit the introduction of pollutants which would cause violation of effluent limits into the public sewer system.
3. The District is currently developing and implementing its "Pollution Prevention Program" to minimize the quantity of pollutants entering the system.
4. NSD maintains and operates a strict monitoring, sampling and testing program in accordance with NPDES regulations. This NSD laboratory is monitored and inspected by the State Department of Health and certified annually. NSD continues to meet all certification requirements.
5. NSD operates its treatment facilities and processes to achieve compliance with applicable regulations for treatment for wastewater. The District is currently experiencing a problem in meeting their discharge requirements as noted below:

The District, as a shallow water discharger, is facing more stringent limits for pollutants discharged to the Bay. The District's existing NPDES permit contains an extremely low copper limit (2.9 micrograms/liter) that the District must comply with by April, 1996. The District is taking all possible steps to reduce effluent copper. However, if their actions do not result in compliance with the copper limit, the District may have to construct very expensive treatment processes to further reduce copper.

Funding

In May 1993, NSD completed a "Capital Facilities Financing Plan" which developed the plan and procedures for financing wastewater capital facilities necessary over the next 10 years. NSD funds for operation and maintenance are derived mainly from service charges. Developers are required to finance construction of collection facilities for their developments. In addition, a "Connection Fee" is collected to finance the future treatment and disposal necessary for future development. These sources of revenue are expected to be adequate to provide and sustain all of NSD's projected wastewater service demands for buildout under the Draft General Plan.

Mitigation Measures Proposed by the Draft General Plan

The Draft General Plan includes policies and programs to ensure that demand for wastewater treatment does not outstrip capacity. The Land Use Chapter contains the following objective, policies, and programs.

LU Objective 2 Allow development consistent with infrastructure and adequate public services.

LU Policy 7 Growth Management. Recognize the available and planned capacity of infrastructure and public services when considering proposals for development.

LU Program 7.1: Manage growth and infrastructure capacity through coordination and communication with provider agencies.

LU Program 7.2: Analyze project impacts on infrastructure capacity and public services as part of CEQA review, and require design and mitigation measures in consultation with provider agencies. If CEQA review or other analysis of development projects concludes that a proposed project would result in deterioration of service or would cause available capacity to be exceeded, respond in one or more of the following ways:

- a. Require project redesign in order to prevent service from deteriorating or capacities being exceeded, provided that economic use of the property is not prevented;*
- b. Condition the project on developer funding of improvements needed to maintain services and/or provide additional infrastructure capacity;*
- c. Approve the project if it can be found that it will:*
 - i. generate substantial overriding public benefits*
 - ii. be in compliance with all of the other goals, objectives, and policies of the General Plan, and*
 - iii. benefit the public health, safety, and general welfare of the community.*

LU Policy 8 Development to Pay Fair Share. Require new developments to pay their fair share of infrastructure improvements and public service costs to maintain infrastructure capacity and service levels in the City, to the extent allowed by law.

LU Program 8.1: Continue the five-year Capital Improvement Program.

LU Program 8.2: Conduct Planning Commission review of the Capital Improvements Program annually to ensure consistency with the General Plan.

LU Program 8.3: Establish and periodically review public facilities impact fees.

LU Program 8.4: Support efforts to charge and collect equitable fees by other agencies providing infrastructure and public services in Novato so that levels of service consistent with agency standards can be attained.

The Public Facilities and Services Chapter includes additional policies and programs related to new infrastructure needs.

PF Objective 1 Ensure that the development allowed in the General Plan is compatible with existing and planned public facilities.

PF Policy 1 Management of Public Facilities. Manage public facilities in conjunction with new development through continued planning and budgeting for public facilities and coordination with other agencies for those services which the City does not provide.

PF Program 1.3: Provide General Plan information to other service-providing agencies, and request determination of any capacity needed to accommodate development called for in the General Plan. Service-provider determinations regarding capacity will be used in making the determination required in LU Program 7.2.

PF Program 1.4: Provide information on development applications to other service-providing agencies, to enable them to assess appropriate fair share impact fees. The City will require proof of payment of these fees before issuing a building permit.

PF Objective 2 Ensure that public-service providers can continue to provide adequate public services given the additional demand from new development.

PF Policy 3 Management of Public Services. Work with public service agencies to ensure that those agencies have the means to provide services required by Novato residents and businesses.

PF Program 3.2: Work with the Novato Sanitary District to ensure that wastewater is adequately collected, treated, and disposed of.

PF Program 3.3: Work with the North Marin Water District to ensure the provision of adequate potable water to Novato residents and businesses.

PF Program 1.3 Provide General Plan information to these service-providing agencies, and request determination of any service capacity needed to accommodate development called for in the General Plan. Service-provider determinations regarding service capacity will be used in making the determinations required in LU Program 7.2.

PF Program 3.7: As stated in LU Program 8.4, the City will support efforts by other agencies to collect equitable fees required to maintain adequate service levels.

PF Policy 5. Water Conservation. Develop and implement water conservation programs in Novato.

PF Program 5.2: Use treated wastewater for irrigation of City facilities and encourage wastewater irrigation at other public and private facilities, where practicable.

The Economic Development and Fiscal Vitality Chapter also contains policies and programs aimed at ensuring that new development pay its fair share for required capital facilities (see

EC Policy 24 and Policy 25 and attendant programs). EC Policy 26 calls for fiscal impact analyses of projects.

Additional Mitigation Measures Suggested

The Draft General Plan objectives, policies and implementation programs are generally sufficient to ensure the continued provision of adequate wastewater treatment for existing and proposed development within the Sphere of Influence. These policies and programs ensure that the City will determine whether there are adequate public infrastructure and services in place or planned prior to approving new development. If adequate infrastructure or services are not available, then Land Use Chapter policies and programs require the City to require project changes or funding of necessary improvements; otherwise, a project cannot be approved unless it has overriding public benefits as well as meeting other planning criteria. These policies and programs also provide the matrix for ensuring that new development pays its fair share of required public improvements. The Draft Plan policies and programs reduce the impact to a level that is less than significant, and no additional mitigation measures are required.

Impact 4.9-B Future development will generate wastewater and sludge that must be disposed of at NSD facilities.

Recent studies by NSD indicate that the current reclamation and sludge disposal facilities are capable of handling all wastewater and sludge requirements (including any new development considered within the Sphere of Influence) until 2010. Thus, the additional wastewater and sludge generated by Draft General Plan buildout is not a significant impact. Although the current capacity of the reclamation facility is adequate, NSD is considering expansion of the facility to provide greater flexibility and reliability for the reclamation and re-use operation. There is no known limit to the capacity of the site for sludge disposal.

Mitigation Measures Proposed by the Draft General Plan

While no mitigation is required, the Draft General Plan policies and programs listed under Impact No. 4.9-A will further reduce this impact.

Additional Mitigation Measures Suggested

No additional measures are required since this is not deemed a potentially significant impact.

Impact 4.9-C Growth in certain areas of the City may generate wastewater that cannot be adequately collected by existing sewer collectors.

While the existing and planned facilities of NSD are adequate to provide wastewater service to existing development, for the potential additional development under the Draft General Plan, some new sewer construction and pump stations will be required. This construction will be financed and performed by the developer on a site-by-site basis. Each development requires a specific permit from the NSD. NSD carefully reviews the plans and specifications for needed construction which must accompany the application for the permit

and which must be prepared by a Registered Civil Engineer. Permit approval will contain any special conditions which must be accomplished in the construction. Construction must be performed by a Licensed Underground Contractor. NSD inspects the work in progress, performs a final inspection, and tests the system prior to acceptance. Upon acceptance the facilities are dedicated to NSD and become an integral part of its system. The NSD process ensures that new development will not create a significant impact as regards sewage collection.

Mitigation Measures Proposed by the Draft General Plan

The Draft General Plan policies and programs listed under Impact 4.9-A will apply to this impact.

Additional Mitigation Measures Suggested

The Draft General Plan objectives, policies and implementation programs are generally sufficient to ensure the continued provision of adequate wastewater collection for existing and proposed development within the Sphere of Influence. These policies and programs ensure that the City will determine whether there are adequate public infrastructure and services in place or planned prior to approving new development. If adequate infrastructure or services are not available, then Land Use Chapter policies and programs require the City to require project changes or funding of necessary improvements; otherwise, a project cannot be approved unless it has overriding public benefits as well as meeting other planning criteria. These policies and programs also provide the matrix for ensuring that new development pays its fair share of required public improvements. The Draft Plan policies and programs reduce the impact to a level that is less than significant, and no additional mitigation measures are required.

4.10 WATER

This section has been reviewed for accuracy by the North Marin Water District.

A. Setting

The *Existing Conditions Report* (Chapter 16) contains a complete description of the public water system in Novato. The following is a summary of the more important points in that longer discussion.

Most of the Novato Sphere of Influence (about 95 percent) is supplied with potable water by the North Marin Water District (NMWD). About 5 percent, including Hamilton AFB, is supplied by the Marin Municipal Water District (MMWD). The NMWD receives most of its water supply from the Russian River, via the North Marin Aqueduct. Through the Master Agreement which Sonoma County Water Agency (owner and manager of Russian River Water Rights) has with seven other cities and water districts in Sonoma County, the NMWD has an annual entitlement of 12,360 acre feet (4 billion gallons) of Russian River water. NMWD also receives a small amount of its supply from Stafford Lake, a reservoir on Novato Creek. MMWD receives its water supply from reservoirs on the Mount Tamalpais watershed in southern Marin County, two other reservoirs, and from the Russian River through a separate agreement with the Sonoma County Water Agency. Because the area currently served by MMWD will be served by NMWD once the government lands are transferred to the private sector, the remainder of this analysis focuses on the NMWD.

Annual water demand for the NMWD in Fiscal Year 1993-1994 was 9,770 acre-feet (3.2 billion gallons) with an overall available supply (Russian River and Stafford Lake sources) of 12,616 acre feet (4.1 billion gallons). NMWD has projected a future demand (year 2015) need of 16,500 acre feet (5.4 billion gallons). The District is preparing to meet this need by utilizing the currently minimum available 256 acre-feet from Stafford Lake (a local water supply) and 17,188 acre-feet of Russian River water to be obtained by increasing the current entitlement to 16,244 acre-feet and utilizing 944 acre-feet of surplus winter water, which is available and would be backfed into Stafford Lake during a critical dry year. The total water supply thus projected is 17,444 acre-feet (5.7 billion gallons). Current treatment facilities are adequate to meet this need, and additional production, storage, and distribution facilities will be added as the need arises. The primary constraint at this time is the existing 19.9 mgd capacity of the aqueduct.

Water from the Russian River is treated (chlorinated and pH adjustment) by SCWA. Stafford Lake water is treated using chlorination, flocculation, sedimentation, and filtration at NMWD's Stafford Lake Treatment Plant. Water from the Stafford Lake pipeline and the North Marin aqueduct is delivered to customers via a distribution system including 273 miles of pipeline, 25 gravity storage tanks with a capacity of 27.6 million gallons, 7 smaller hydropneumatic pressure storage tanks, 7 pressure regulating stations, and numerous pump stations, valves, fire hydrants, and services.

B. Impacts and Mitigations

Criteria Used to Determine Significance

A project will have a significant impact if it:

1. Increases the demand for water which exceeds the available supply or the planned supply of the North Marin Water District.
2. Requires water supply improvements for which there are no planned method of financing and constructing.
3. Proposes changes in criteria, operation, or regulations which affect important environmental areas of concern (e.g. water quality).

In general, the water demand for total buildout is less than NMWD's projections which are based on the current Countywide General Plan. Therefore, the planned entitlement can be expected to meet water supply demands in terms of quantities and quality. The water distribution will continue to be developed on a site-by-site basis as new development is proposed and constructed. All water supply requirements for new development are financed by the developer. The level of service essential to meeting the water supply requirements is, therefore, achievable for all alternatives.

Impact 4.10-A Development will increase the demand for public water.

Development of all major sites as well as all infill sites will result in an increased demand for public water. To meet projected water demands in 2015 and provide a margin of safety against a severe drought or other emergency, the District's planning strategy is as follows:

1. Increased Entitlement: The District's Board of Directors has submitted Resolution No. 92-25 to the Sonoma County Water Agency (SCWA) requesting the previously discussed increase in water entitlement. SCWA has approved the entitlement request and is presently preparing an environmental impact report which is required before a new Master Agreement can be adopted.
2. Water Conservation: The District continues to vigorously pursue progressive strategies that would, by the year 2015, achieve a permanent 15 percent reduction in water demand during the average day of the peak month, compared to the average level of demand for the 8-year period ending July, 1986. The program currently is comprised of ongoing education through the District's School Education Program, Xeriscape Promotion Program (Cash for Grass), Turf Irrigation Scheduling Information Service, and Low Flow Fixtures Program (cash incentive to homeowners and developers). A 5.2 percent conservation rate has already been achieved.
3. Recycled Water: Recycled water is not presently utilized in the Planning Area except for 820 acres of pasture land in the Novato Sanitary District's reclamation facility. However, NMWD has studied the subject and projects recycled water will be cost effective for some large, new irrigated green spaces, principally golf courses that may be situated in Novato. The District is currently working with the

Novato Sanitary District and developers who are pursuing two 18-hole golf course projects which would use recycled water.

4. Contingencies: During dry years when Stafford Lake's water level is low, the District can increase the lake's summer yield by pumping (backfeeding) a portion of their Russian River entitlement to the lake during the off-peak winter months. The District is also cooperating with SCWA in studying the feasibility of developing standby well capacity in a large underground basin in Sonoma County.

The District is aware of two recent considerations that might adversely affect the availability of water supply from the Russian River. First, the State Water Quality Control Board is considering regulations which would reduce pumping of Russian River water. Also, PG&E is considering closing and abandoning their Potter Valley Power Plant. This plant generates hydropower from releases made from Lake Pillsbury (on the South Fork of the Eel River) through a diversion into Lake Mendocino (on the Russian River north of Ukiah). Closure of PG&E's plant and cessation of the diversion would reduce the amount of water currently available on the Russian River. The District has agreed to participate with other cities and water agencies affected by this potential change in negotiations with PG&E, with a view towards assuring continuation of the diversion. At any rate, NMWD is proceeding, at this time, as if their entitlements are secure and will be adequate to meet the projected needs for their service area. In addition, NMWD has a strategy in place to avoid the impacts from reduced supply from any cause (e.g. long-term drought).

The District has taken very positive steps to assure continuity of service by such actions as:

- a. Raising the height of Stafford Dam, improving its spillway to higher standards (1985) and repairing the toe-drain (1984).
 - b. Installing and monitoring devices to detect and record earth movements at Stafford Dam. These devices recorded actual conditions experienced in the 1989 Loma Prieta Earthquake.
 - c. Conducting inspections of the Stafford Dam, its intake and outlet works in concert with the California Division of Dams and Safety.
 - d. Constant maintenance of Stafford Lake Treatment Plant to assure its reliability. Note: this plant is used only seasonally (spring through fall) and then only 12 - 15 hours per day.
 - e. Careful design and construction of the aqueduct, new storage and transmission facilities to industry standards so as to avoid potential loss of service due to flood, earthquake, sabotage, vandalism or other hazards.
 - f. Provision of a high level of security for all facilities including added personnel to guard facilities, when appropriate.
 - g. Installation of a computer system which allows staff to monitor system operations continuously from the North Marin headquarters.
5. Public Health and Safety: The District currently provides fire protection in accordance with criteria established by the appropriate local fire district, in this case,

the Novato Fire Protection District. Most current facilities meet, or exceed, all fire requirements and all new development will be sized so as to meet, or exceed, those requirements.

The District carefully monitors water quality in accordance with State and Federal regulations. With the exception of the Aqueduct water's tendency to erode some copper plumbing, the Novato supply is of excellent quality. The SCWA has designed an additional treatment step (which will be on-line in the summer of 1995) to correct the copper corrosion problem.

New increased coliform monitoring requirements have been promulgated by public health authorities in recent years. The standards are much stricter than in the past and some segments of the distribution system have been identified as being potential candidates for additional chlorination. A recently completed study determined that an additional chlorine booster station is needed, and its provision has been included in the District's Capital Improvement Program. Further, the District's program includes tank inspections, flushing of pipelines, and an aggressive backflow prevention device inspection program to assure high quality of water delivered to customers. These programs will be continued and expanded, if necessary, to meet future demands of both existing and additional development.

The District maintains the "Stafford Water Treatment Plant Risk Management and Prevention Program" (RMPP) to assure proper handling of hazardous materials (chlorine and sulfur dioxide) used in water treatment at the Stafford Lake Plant. The RMPP provides information for emergency planning and provides information on actions taken by North Marin in the prevention of toxic releases and mitigation and response programs related to these gases.

The City adopted a Multihazard Emergency Plan in 1991. The purpose of this plan is to ensure that the City will be prepared and respond effectively in the event of emergencies to save lives and restore and protect property; repair and restore essential public services; provide for the protection and distribution of medical, food, water and other vital supplies; and coordinate operations with Civil Defense emergency organizations and other jurisdictions to maintain continuity of government. The District also has in place its own "Emergency Operations Plan" that deals with specific emergencies and hazards inherent to their facilities and processes. In addition, NMWD is part of a mutual aid network of 46 or more water agencies in Northern California that have agreed to support each other during emergency conditions.

The flood hazards from an incredible failure of Stafford Dam have been mapped. Refer to Figure 4.4 in the *Existing Conditions Report*.

Storage tank facilities are designed, constructed and monitored to assure they are sound and safe.

6. Funding: NMWD funds for operation are derived mainly from water sales, general obligation bonds (serviced by tax collections), and interest revenues. Developers are required to finance water supply improvements for their developments, collected as "Connection Fees" in accordance with the "Water Service Facilities Construction Agreement" for the project. These sources of revenue, are now, and are expected to be in the future, adequate to provide and sustain all of NMWD's projected water

supply demands and will meet or exceed demands for any of the General Plan alternatives assessed in this EIR.

The District's planning strategy ensures an adequate supply of potable water for new development possible under the Draft General Plan. However, environmental review and water rights determination regarding expanded Sonoma County water supply are now underway; these issues must be resolved before any additional District entitlement request can be finalized.

Mitigation Measures Proposed by the Draft General Plan

Draft General Plan objectives, policies and implementation programs provide the framework for the continued provision of an adequate supply of high quality water to existing and proposed development within the Sphere of Influence. The Land Use Chapter includes the policies and programs that will ensure that the City approves new development only if there is adequate infrastructure to serve that development (Land Use Chapter LU Policies 7 and 8 and associated programs and Public Facilities and Services Chapter PF Policies 1 and 4 and associated programs; these were listed previously in the section on Wastewater). In addition the Public Facilities and Services Chapter contains specific policies and programs related to potable water, namely:

PF Policy 5. Water Conservation. Develop and implement water conservation programs for Novato.

PF Program 5.1: Adopt a Water Use Reduction in Landscaping Ordinance. Consider the use of water-saving devices for residential and commercial uses; limits to the amount of turf area in new developments; the use of drip irrigation systems; and other water conserving measures.

PF Program 5.2: Use treated wastewater for irrigation of City facilities and encourage wastewater irrigation at other public and private facilities, where practicable.

PF Policy 3 Management of Public Services. Work with public service agencies to ensure that those agencies have the means to provide services required by Novato residents and businesses.

PF Program 3.3: Work with the North Marin Water District to ensure the provision of adequate potable water to Novato residents and businesses.

Additional Mitigation Measures Suggested

The Draft General Plan objectives, policies and implementation programs are generally sufficient to ensure the continued provision of adequate potable water for existing and proposed development within the Sphere of Influence. These policies and programs ensure that the City will determine whether there are adequate public infrastructure and services in place or planned prior to approving new development. If adequate infrastructure or services are not available, then Land Use Chapter policies and programs require the City to require project changes or funding of necessary improvements; otherwise, a project cannot be approved unless it has overriding public benefits as well as meeting other planning criteria. These policies and programs also provide the matrix for ensuring that new development pays its fair share of required public improvements. The Draft Plan policies

and programs reduce the impact to a level that is less than significant, and no additional mitigation measures are required.

Impact 4.10-B Development will require construction and/or replacement of water mains, storage facilities, treatment facilities, and pump stations.

While the existing and planned facilities of NMWD are adequate to provide for water supply to existing development and for the potential additional development under the Draft General Plan, some new construction and/or replacement of water mains, storage facilities and pump stations will be required to serve new development in Novato. Unless these facilities are funded and constructed, there would be a significant impact as regards water pumping, treatment, and storage. The following paragraphs briefly describe the required sequential approach for each planned new development.

1. The developer makes an application to NMWD for a feasibility report which determines water supply demands, availability of water, new water facilities required, and an estimate of costs for providing the service.
2. The developer would acquire needed land use approvals (which concurrently includes complying with CEQA requirements).
3. The developer makes an application to NMWD for water facilities design and construction.
4. The developer arranges financing and contracts with NMWD for its water supply connection including arrangements for construction of needed facilities. Responsibility for construction facilities is often divided between the District and the developer and is specified in the contract. Any construction accomplished by the developer is overseen and periodically inspected (during construction) by the District. A final inspection is performed to assure full compliance with District facility designs, standards and construction requirements.

The District has recently completed a Feasibility Study for each of the four sites described below. The requirements listed for each site are considered to be typical of facility requirements that would be necessary for development of specific sites (large projects) in the Novato SOI:

Site - Bahia

Project Components

1. Construction of new residences.
2. Community Center.

Anticipated Major Water Facilities

1. Contribution to and construction of a new Zone 2, one million gallon storage tank at the existing Crest Tank storage site.

2. Contribute to a future Zone 1, five million gallon storage tank at a site to be determined.
3. Replace existing School Road Pump Station with a new pump station on Bahia Drive at Cerro Crest.

Site - Black Point Golf Links

Project Components

1. Construction of new residences.
2. Club house.
3. Possible a golf course.

Anticipated Major Water Facilities

1. Contribute to and construct an on-site or off-site Zone 2 storage tank. If on-site, construct 500,000 gallon storage tank; if off-site, contribute to one million gallon storage at Crest Tank and construct 12,000 linear feet of 16-inch transmission main from Crest Tank to site.
2. Upgrade existing School Road Pump Station.
3. Upgrade existing Black Point Pressure Reducing Station.
4. Construct 2,000 linear feet of transmission main (size to be determined) from Black Point Pressure Reducing Station to site.

Site - Buck Center

Project Components

1. Large Laboratory and Research facility.
2. Residential units for students.

Anticipated Major Water Facilities

1. Construct on-site 500,000 gallon storage tank.
2. Construct on-site pump station at existing Nunes tank site.
3. Construct 3,000 linear feet of 16-inch transmission main.

Site - Hamilton Field Project

Project Components

1. Conversion of existing Air Force Base government structures to commercial use.
2. Construction of new residences.

Anticipated Major Water Facilities

1. Contribute to future Zone 1, five million gallon storage tank at a site to be determined.
2. Contribution to purchase from MMWD of existing 24-inch highway 101 crossing.
3. Construction of pressure reducing station on Main Gate Road.
4. Construction of 4,300 linear feet of 16-inch water main.

Cost/Priority

The preliminary planning for the four sites noted above is typical. Reliable cost estimates for new development are developed on a site-by-site basis when plans are approved for construction by the responsible government entity. Cost for new service connections is determined by NMWD Regulations which establish cost based on type of use and anticipated water demands, and is collected as part of the Initial Charges (connection fees). The current annual cost of operating and maintaining the water facilities averages \$244 per typical single family dwelling. It is noteworthy that the District's rate is significantly lower than the median of a sampling of similar costs of 16 Bay Area cities and/or water districts. Most of the revenue needs for operating and maintaining the system is generated through water sales to water consumer customers.

Priority for hookups is established on a first-come-first-served basis and is totally dependent on the developer's ability to complete all requirements essential for project approval.

Mitigation Measures Proposed by the Draft General Plan

Development will require construction and/or replacement of water mains, storage facilities, treatment facilities and pump stations. The Draft General Plan policies and programs listed under Impact No. 4.10-A are all applicable to Impact No. 4.10-B. These policies and programs ensure that development will not occur until required facilities are funded and constructed and thereby reduce the impact to a level that is less than significant.

Additional Mitigation Measures Suggested

The policies and programs included in the Public Facilities and Services Chapter and the Growth Management policies and programs of the Land Use Chapter reduce this impact to a level that is less than significant. No additional mitigations are required. CEQA compliance is determined by the City for projects within the Novato City Limits.

4.11 FIRE PROTECTION AND EMERGENCY RESPONSE

This chapter has been reviewed for accuracy by the Novato Fire Protection District.

A. Setting

Fire protection and emergency medical response for Novato is the responsibility of the Novato Fire Protection District. The *Existing Conditions Report* (Chapter 22) contains a detailed description of existing resources for that district. The following is a summary of the more important points from that discussion as augmented with data from the District's *Five Year Fire/Life Safety Plan* (1994 Edition).

Staffing and Equipment

The District operates four fire stations. These stations are staffed by 72 line personnel (firefighters, captains, engineers, and emergency medical personnel). There are also 11 administrative personnel.

Financing

The District is a special district that has its own elected Board of Directors. The District receives financing primarily from a percentage of property taxes collected in the District as well as revenues from a special tax that it is authorized to levy. The District is allowed to levy up to 4 cents (\$0.04) per square foot for residential occupancies and 6 cents (\$0.06) per square foot on commercial/industrial occupancies. The District has never levied the maximum. The average special tax levy has been 1.9 cents (\$0.019) per square foot for residential development and 3.25 cents (\$0.0325) per square foot for commercial/industrial development.

Incident History

Over the past five years, 66.6 percent of the District's responses have been to calls for medical assistance and 33.4 percent to calls for fire suppression. The history of calls is shown in Table 25.

Table 26

Fire Response History

<u>TYPE OF CALL</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>
Medical	1,936	2,016	1,964	2,091	2,335
Structure Fire	57	57	62	48	55
Vehicle Fire	165	142	52	51	61
Grass Fire	54	88	53	49	58
Total	2,212	2,303	2,131	2,239	2,509

Wildland Fire Hazard

Given the existing topography, vegetation, and climate in the Novato area, there is the potential for major wildfires that could endanger lives and destroy a considerable number of residences. The District is well aware of this danger. It hired a consultant to conduct fire modeling in several critical locations to determine wildfire effects.

The District has assessed the wildfire potential in the Novato area and developed a map showing the areas of high fire hazard. Figure 19 shows the high fire hazard areas in the Novato area.

To reduce fire hazard in these areas, the Fire Code has been amended to require vegetation clearance, access, and construction methods equivalent to the State's fire safe guidelines (Section 4291). Class A roofs are required in these areas. All new commercial structures over 2,500 square feet in size and all new residential development, regardless of size, within the City must include an automatic sprinkler system.

While these requirements reduce the chance of individual structures being lost in a fire, the potential for a major wildfire with resulting loss of life and property remains. The Fire District has developed recommendations in its 1994 Plan to address this issue. They include:

1. Work with the Marin County Fire Department to develop pre-incident plans and fire models for specific topographic locations.
2. Apply the 1991 Fire Code to address interface problems.
3. Prepare a draft auto aid/mutual aid pact with the San Antonio Fire Company for approval by the Marin County Fire Chiefs, the Board of Directors, and the Sonoma County Fire Services.

State Responsibility Areas

Within the Fire District and the City's Sphere of Influence are areas defined as wildland areas where the State has fire suppression responsibility. In Marin County this responsibility is contracted to the Marin County Fire Department (MCFD). The MCFD and the County of Marin maintain similar standards regarding access, vegetation clearance, roofing, etc. for new development. In any case, the Novato Fire Protection District responds to any call for assistance within its jurisdiction.

Water Supply for Fire Protection

The existing water supply system is characterized by District staff as excellent. There are only a few scattered locations at high elevation where there is not an adequate fireflow (i.e., at least 1,000 gallons per minute). The requirement that new construction include automatic sprinklers also reduces dependence strictly on available fireflow.

Fire District Objectives

The Novato Fire Protection District has established explicit Objectives for serving the local populace (see the *Five Year Fire/Life Safety Plan*, 1994 Edition for a full listing of the 25 Objectives). The first two Objectives are "The Fire District shall control 90 percent of all structure and brush fires with the first alarm assignment," and "The Fire District will

respond to 90 percent of all emergency incidents within five minutes." The District continually reviews its success in meeting these Objectives and develops plans or recommendations for furthering those objectives.

Hazardous Materials

A number of businesses in Novato use, store, and transport hazardous materials. Non-local businesses transport such materials through Novato, especially on Highway 101 and Highway 37.

In Novato, the agency which has the overall responsibility and authority to regulate hazardous materials storage and emergency response is the County of Marin. The administering agency, which is the term used to identify the jurisdiction with whom this responsibility lies, has many responsibilities, but some of them include:

1. Regulate materials in excess of 55 gallons of a liquid, 500 pounds of a solid, and 200 cubic feet of a compressed gas
2. Receive business plans, providing inventories and 24-hour response contact; 30-day updates; hazardous waste estimates.
3. Develop Area Plan for emergency response to actual or threatened releases.
4. Send to Fire Departments Business Plan information and notice of unauthorized releases.
5. Receive Risk Management and Prevention Programs, including specific procedures for handling materials and accidental releases.

One of the Fire District's Objectives is "The Fire District shall provide a level of service to the community that will allow for initial hazardous material incident control activities, hazardous materials regulatory activities and assistance with scene management." To meet this Objective, the District's 1994 Plan recommends the following:

1. Utilize engine companies to identify occupancies with hazardous materials and notify Fire Prevention.
2. Fire Prevention shall work with the City/County agencies to obtain compliance for hazardous materials and insure that permits are issued.
3. When compliance and permits are issued to occupancies handling hazardous materials, they will then be returned to the engine companies for inspection.
4. Evaluate the possibility of developing a joint powers agreement with external agencies who have a common interest in identifying hazardous material locations.

Emergency Preparedness

The City adopted a *Multihazard Emergency Plan* in 1991. The purpose of this plan is to ensure that the City will be prepared and respond effectively in the event of emergencies to save lives and restore and protect property; repair and restore essential public services; provide for the protection and distribution of medical, food, water and other vital supplies;

FIGURE 19

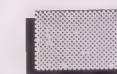
FIRE HAZARD AND RESPONSE CONSTRAINTS

Scale: 1" = 4000'

N



Hazard Areas



Areas Where Response Time
is Over 5 Minutes



SOURCE: Novato Fire Protection District,
1995

City of Novato General Plan Revision
Draft
Environmental Report

----- City Limit Line
..... Sphere Of Influence

Revised & Recirculated
November, 1995

This map was developed for General Plan purposes. The City of Novato is not responsible or liable for use of this map beyond its intended purpose. More detailed information is available at the Novato Community Development Department.

and coordinate operations with Civil Defense emergency organizations and other jurisdictions to maintain continuity of government.

The District has adopted an ICS model for disaster preparedness and has aggressively addressed internal Fire District plans, external agency plans, and citizen education programs.

B. Potential Impacts and Mitigations

Criteria Used to Determine Significance

A project will have a significant impact if it:

1. Increases the need for additional fire protection and emergency response to a level which exceeds the ability of the agencies to provide.
2. Allows development in areas of high fire hazard where people and property would be placed at substantial risk from a wildfire.

Impact 4.11-A New development will increase the demand for fire protection services.

New development will increase the demand on Fire District staff. There will be an increase in the calls for services as well as an increased demand for plan checks, inspections, etc. To meet the fire protection and emergency response Objectives adopted by the District, it will eventually be necessary to add additional staff and equipment. If additional staff and equipment are not added as development occurs, there will be a significant impact on the ability of the District to provide adequate fire protection and emergency response to existing and future residents and businesses.

District staff has reviewed the buildout potential of this Draft General Plan. To continue to meet their adopted Levels of Service of responding to 90 percent of emergency calls within five minutes and controlling 90 percent of all structure and brush fires with the first alarm assignment, the District believes that one additional engine company and one paramedic unit would have to be added (Rentz, Elliott, and Meston, personal communication).

One engine company is staffed by three personnel, and there are three shifts so this would add nine personnel. One paramedic unit is staffed by two personnel for a total of six additional personnel. The cost of adding one new equipped fire engine is about \$330,000 (1995 dollars). An equipped paramedic unit would cost about \$200,000. The additional staffing would cost \$675,000 per year for the engine company and \$400,000 per year for the paramedic unit.

The District currently is funded primarily by a portion of property taxes collected in the District and a special tax that allows the District to annually levy up to 4 cents (\$0.04) per square foot of residential occupancies and 6 cents (\$0.06) per square foot on commercial/industrial occupancies. The District has never levied the maximum. The average special tax levy has been 1.9 cents (\$0.019) per square foot for residential development and 3.25 cents (\$0.0325) per square foot for commercial/industrial development.

Mitigation Measures Proposed by the Draft General Plan

The Safety and Noise Chapter of the Draft General Plan contains the following policies and programs:

SF Objective 6 Reduce Fire Hazard.

SF Policy 15 Utilize the Fire Hazard Severity Scale: Use the Fire Hazard Severity Scale for the classification of fire hazards in wildland areas.

SF Policy 16 Minimize Fire Risk in New Development: Review all development proposals for fire risk, and require mitigation measures to reduce the probability of fire.

SF Program 16.1: Continue the Novato Fire Protection District's review of all development proposals to reduce fire risk.

SF Program 16.2: Require new development within mapped high fire hazard zones established by the Novato Fire Protection District and/or the Marin County Fire District to develop and implement a Vegetation Management Plan. (Refer to SF Map 4) The Plan shall be part of the development application and approved by the Novato Fire Protection District and the City. The Plan shall be developed by an arborist or vegetation management specialist. The City shall work with the Fire District to ensure that actions recommended in the Plan are implemented in the future. The Novato Fire Protection District has the right to review properties to judge whether actions recommended in the Vegetation Management Plan are being properly implemented in a timely fashion.

SF Program 16.3: Establish overlay zoning districts for high fire hazard areas establishing several types of fire-resistant vegetation buffer zones around structures.

SF Program 16.4: Assess development applications on sites beyond a five-minute response time of a fire station to ensure acceptable mitigation measures are provided.

SF Program 16.5: Continue to enforce the Fire Safety Ordinance requiring sprinkler systems for all new commercial/industrial development greater than 2,500 square feet and all new residential development regardless of size.

SF Program 16.6: Limit building envelopes in high fire risk areas to provide for "defensible space" against fires.

SF Policy 17 Help Maintain A High Level of Fire Protection: Work with the Novato Fire Protection District to help ensure a continued high level of fire protection.

SF Program 17.1: Consider adopting the California Fire Safe Regulations prepared by the California Department of Forestry.

SF Program 17.2: Continue the City's residential resale inspection program that requires inspection of existing residential property to be performed by a Building Inspector prior to the close of escrow.

SF Program 17.3: Ensure that new traffic signals include a system which allows emergency vehicles to change the signal.

SF Program 17.4: Require adequate access for emergency vehicles, adequate street width and vertical clearance, and parking restrictions for new development.

SF Policy 18 Vegetation Management: Continue to implement an effective and environmentally sound vegetation management and weed abatement program.

SF Program 18.1: Continue to require the use the following methods of weed abatement wherever possible: use of mechanical rather than chemical removal of weeds; reseeding with native bunchgrass varieties in sloping disturbed soils; and limiting weed abatement activities in areas with known endangered plant and animal species. Require a zone system of landscaping for defensible space around buildings in high fire risk areas.

SF Policy 19 State Building Code: Continue to enforce the State Building Code (UBC).

SF Program 19.1: Continue to update and enforce the City's Building Code and Fire Code provisions.

SF Program 19.2: Continue to require a greater degree of fire resistance in roof coverings and exterior building materials for structures within or adjacent to hazardous areas than what is specified in the UFC, as determined by the Chief Building Official upon making of findings specified in Health and Safety Code § 13143.4.

SF Policy 20 Fire Hydrant Water Flows: Work with the North Marin Water District and the Novato Fire Protection District to ensure that there exists sufficient water flow in fire hydrants throughout Novato.

SF Program 20.1: Continue to require that all new developments be provided with sufficient fire flow facilities at the time of permit issuance.

SF Policy 21 Mutual Aid Agreements: Continue to participate in mutual aid agreements with the County and State fire fighting agencies.

SF Objective 4 Assure Emergency Preparedness.

SF Policy 12 Interagency Cooperation: Continue to cooperate with the appropriate federal, state and local agencies to implement effective emergency plans.

SF Policy 13 Maintain an Updated Multihazard Emergency Plan: Update the City's Emergency Preparedness Plan, as needed.

SF Program 13.1: Revise, as appropriate, the City's Emergency Preparedness Plan to comply with the County's Plan and changing conditions within the Novato Planning Area. Revise the plan to conform to the new California Standard Emergency Management System (SEMS) by December 1996.

SF Policy 14 Emergency Facilities: Identify essential emergency facilities and ensure that they will function in the event of a disaster.

SF Program 14.1: Identify specific facilities, such as City Hall, schools, fire stations, police building and hospitals, and lifelines, such as telephones, electric, water and sewer service critical to effective emergency/disaster response, and evaluate their abilities to survive and operate efficiently immediately after a disaster. Designate alternative facilities for post-disaster assistance in the event that the primary facilities have become unusable.

SF Program 14.2: Minimize potential earthquake damage to existing publicly owned buildings and emergency facilities through strengthening building structure, eliminating hazardous features, or relocating facilities to safer buildings where feasible.

SF Program 14.3: Continue to maintain an emergency evacuation routes system. Consider establishing evacuation route standards, such as road widths.

SF Program 14.4: Publicize the City's evacuation routes and other aspects of its Emergency Preparedness Plan.

SF Program 14.5: Maintain designated evacuation routes in a passable condition at all times, as feasible.

The Land Use Chapter includes the policies and programs (LU Policies 7 and 8 and ancillary programs) that will ensure that the City approves new development only if there is adequate infrastructure to serve that development. The Public Facilities and Services Chapter Policy 3 ensures that the fire district can continue to provide adequate services. Specifically, PF Program 3.1 states:

PF Program 3.1: Work with the Novato Fire Protection District to ensure that the District can continue to provide adequate fire protection and emergency response. The Novato Fire Protection District maintains its own Level of Service standards to determine adequate protection and response.

Additional Mitigation Measures Suggested

The policies and programs described above are generally adequate to reduce the cumulative impact to a level that is less than significant. The policies and programs include City support for the Fire Protection District to collect fees necessary to finance future staffing and equipment needs if the District can show that normal revenues are insufficient to provide for additional staff and equipment.

Conversations with Fire District staff indicate that the following additions should also be made to further ensure adequate fire safety.

SF Program 17.1 should be replaced with the following program:

SF Program 17.1 Continue to require all new development to meet the adopted fire safe regulations originally developed by the State and currently adopted as an appendix to the Fire Code.

An additional program should be added to ensure fire access. It should read:

SF Program 17.5: All development that includes private access roads or fire roads shall provide access rights and keys to any gates to the Novato Fire Protection District and shall be deeded accordingly.

An additional policy and programs are recommended to address wildland fire hazard on public lands in and adjacent to the City.

Policy x Fire Hazard on Public Lands. Public lands should be managed to minimize the chances of a wildfire that would affect residences and businesses in Novato.

Program x.1 The City should request that the Marin County Open Space District and all other public agencies assess the wildland fire hazard on their holdings within and adjacent to the City. If these assessment indicate a significant hazard to residents of Novato, the City should request that the agency take steps to reduce that fire hazard to an acceptable level.

These additions will mitigate the cumulative impact on fire protection to a level that is less than significant.

Impact 4.11-B New development will require construction of new water mains to ensure adequate fireflows.

The Fire District requires fireflow of at least 1,000 gpm to serve new residential development. Commercial development and unsprinklered residences require higher fireflows of up to 3,500 gpm. If adequate fireflow (or an on-site sprinkler system) is not available, then this would be a significant impact. The District will continue to review development applications to ensure that adequate fireflow is provided. The Fire District currently works with the North Marin Water District to address existing and projected fireflow constraints.

Mitigation Measures Proposed by the Draft General Plan

The Safety and Noise Chapter contains the following policy and programs.

SF Program 16.4 Continue to enforce the Fire Safety Ordinance requiring sprinkler systems for all new commercial/industrial development greater than 2,500 square feet and all new residential development regardless of size.

SF Policy 20 Fire Hydrant Water Flows: Work with the North Marin Water District and the Novato Fire Protection District to ensure that there exists sufficient water flow in fire hydrants throughout Novato.

SF Program 20.1: Continue to require that all new developments be provided with sufficient fire flow facilities at the time of permit issuance.

Additional Mitigation Measures Suggested

Existing standards as well as the policy and program included in the Draft General Plan ensure that adequate fireflow for future development will be provided. The impact will be less than significant. No additional mitigation is required.

Impact 4.11-C New development may expand the use, storage, and transport of hazardous materials. Spills or explosions involving such materials could expose members of the public to a health hazard and require fire department response to major events.

The use and transport of hazardous materials pose a potential threat to life and property. The State has developed strict guidelines to regulate these materials. As was described earlier, the County of Marin is responsible for administering pertinent laws and regulations. Unless these materials are properly stored, transported, and used, their presence poses a significant safety impact.

Mitigation Measures Proposed by the Draft General Plan

The Safety and Noise Chapter of the Draft General Plan includes the following policies and programs.

SF Objective 8 *Reduce hazards of transportation, storage and disposal of hazardous wastes and hazardous materials.*

SF Policy 27 Measures to Reduce Hazards: Consider measures to protect the public health from the hazards associated with the transportation, storage and disposal of hazardous wastes [TSD Facilities].

SF Program 27.1: Continue to refer land use and transportation decisions and other programs involving hazardous materials regulations to the appropriate agencies.

SF Program 27.2: Support the establishment of a household hazardous waste disposal program.

SF Program 27.3: Consider adoption of a Hazardous Materials and Waste Ordinance that defines hazardous waste and hazardous materials and facilitates implementation of State and County regulations and programs regarding hazardous substances.

SF Program 27.4: Continue to implement the Commercial Occupancy Ordinance requiring notification of all hazardous substances that are transported, stored, treated or could be released accidentally into the environment.

SF Policy 28 CEQA Review of Proposed TSD Facilities: Support thorough environmental review for Hazardous Waste Transportation, Storage and Disposal (TSD) Facilities proposed in the Novato Area and throughout Marin County, since the potentially significant, widespread and long-term impacts on public health and safety of these facilities do not respect jurisdictional boundaries.

SF Program 28.1: Request that the Environmental Review of proposed hazardous waste TSD facilities shall, at a minimum, contain the following analysis and information:

- a) A worst case generic description, estimating the number, type, scale, scope, location and operating characteristics of proposed TSD facilities based on the projected volumes and types of hazardous waste. Data from existing facilities regarding the probability of accidents, spills, and explosions should be documented and included;*
- b) An assessment of risk resulting from the accidental release, fire, and explosion of hazardous waste. This assessment should take into account all phases of operation including transport, storage, and treatment. The assessment of risk should include the probability of occurrence and magnitude of impact;*
- c) Quantitative estimates of air emissions, by applying emissions rates of existing facilities to the future volumes of hazardous waste, and identifying emissions for incinerator facilities under worst case circumstances;*
- d) An assessment of non-incineration alternatives for hazardous waste treatment such as chemical dechlorination for the detoxification of PCB's, dioxins, solvents and pesticides; photolysis; and biological treatment; and*
- e) Review of the operating characteristics of proposed TSD facilities, taking into account maintenance and operating procedures, emissions monitoring and safety devices to assure the ongoing enforceability of the mitigating measures that are required.*

SF Policy 29 Regulate Hazardous Materials: Strictly regulate the storage of hazardous materials.

SF Program 29.1: Regulate and enforce the storage of hazardous materials under California Administrative Code Title 19 requirements.

SF Program 29.2: Revise the Zoning Ordinance to require secondary containment facilities and a buffer zone adequate to protect public health and safety on properties with hazardous materials storage and/or processing activities.

This program requires industries and businesses which store or process hazardous materials to provide secondary containment facilities and a buffer zone between the installation and property boundaries sufficient to protect the public health and safety.

SF Policy 30 Truck Routes for Hazardous Materials Transport: Develop, in cooperation with the County and neighboring cities, regulations prohibiting through-transport by truck of hazardous materials on the local street systems and requiring that this activity be limited to State highways.

SF Program 30.1: Consider adopting a Local Hazardous Material Route Plan and install signage and publicize routes for hazardous materials transport in Novato. Adopt an ordinance designating specific routes for transport of hazardous materials.

Additional Mitigation Measures Suggested

The Novato Fire Protection District should continue to pursue its Objectives regarding hazardous materials. Given the policies and programs in the Draft General Plan and the Fire District's recommended program to strengthen local compliance with pertinent laws and regulations, this potential safety impact is reduced to a level that is less than significant. No additional mitigation measures are required.

Impact 4.11-D New development will increase calls for emergency medical response.

The increase in the population as well as the overall aging of the Novato population will increase the demand for emergency medical response. Medical responses comprise two-thirds of the Fire District's workload. Unless adequate staffing is maintained, the Fire District will be unable to maintain the existing response times to medical emergencies. This would be a significant impact.

Mitigation Measures Proposed by the Draft General Plan

The Draft Plan policies and programs previously listed under Impact 4.11-A also apply to this impact. The Safety and Noise Chapter of the Draft General Plan contains the following policies and programs.

SF Objective 7 Maintain an effective medical emergency response system.

SF Policy 25 Maintain High Level of Emergency Medical Response: Encourage the Novato Protection District to continue maintaining a high level of emergency medical response.

SF Program 25.1: Periodically review the effectiveness of the emergency medical response system as part of the City's Emergency Preparedness Plan.

SF Policy 26 Maintain Novato Community Hospital's Emergency Department: Continue to encourage Novato Community Hospital to maintain its emergency department .

SF Program 26.1: Identify actions the City can carry out to support the Novato Community Hospital's emergency department.

Additional Mitigation Measures Suggested

The Fire District anticipates that the revenues created from the buildout under the Draft General Plan will offset the increased operating costs of the District. If this proves not to be the case, the policies and programs in the Public Facilities and Services Chapter (Policies 1 and 4) and the Growth Management policies and programs in the Land Use Chapter (Policies 7 and 8) provide the matrix for the City to regulate new development so that demand will not exceed the District's ability to provide emergency response services. These policies and programs reduce this impact to a level that is less than significant; no additional mitigation is required.

4.12 POLICE SERVICES

This section has been reviewed for accuracy by the Novato Police Department

A. Setting

Police response is provided by the Novato Police Department. The *Existing Conditions Report* (Chapter 23) contains a detailed discussion of the Department's resources and a discussion of its historic response to problems in the community. The following is a summary of that discussion.

Goals and Responsibilities

The overriding goal of the Novato Police Department is to foster community-police cooperation on the delivery of police services, encouraging citizen involvement in the development of strategies to combat and prevent crime and delinquency, and to address public demands for noncrime services.

The police service is that part of the governmental process which provides for the public's safety through the protection of life and property and the preservation of peace. It is the responsibility of the police to control both criminal and noncriminal conduct. This is accomplished through the enforcement of a wide variety of state and local laws, ordinances, and regulations.

The Novato Police Department differs from many local law enforcement agencies in that its "mission" includes numerous proactive programs addressing juvenile delinquency and criminal victimization. While the emphasis on prevention through community involvement and the regulation of minor crimes accounts for major expenditures of police workforce resources, it is in this area that major impacts on criminal activity are realized.

Staffing

The Police Department is currently staffed by 53 sworn officers; it is authorized to employ 54 sworn officers. It also employs 21 nonsworn personnel. The sworn officer to population served ratio is currently less than 1.1 officer per 1,000 people, one of the lowest officer to population ratios in the Bay Area.

Services

The primary responsibility of the Department is to respond to and address criminal activity. In addition to the typical police responsibilities, the Department operates a number of other services including a Crime Prevention Bureau that operates such programs as Neighborhood Watch; an Investigation Bureau; the Drug Abuse Resistance Education (DARE) program; Novato Youth Services Bureau (YSB); School Crossing Guard Program; and the Burglary Auto Theft (BAT) program.

Incident Data

Overall, the City has a relatively low rate of crime as compared to other California jurisdictions. During 1994, the number of felony crimes increased to 1,785 as compared to 1,562 in 1993. Misdemeanor crimes also increased from 3,410 to 3,827 (Barner, personal

communication). A full description of criminal activity and police response is presented in the *Existing Conditions Report*. Table 26 presents incident data for felony crimes between 1989-1993.

Table 27
History of Felony Crimes

<u>OFFENSE</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>
Criminal Homicide	2	0	2	3	0
Forcible Rape	10	12	16	17	22
Robbery	15	20	18	24	29
Aggravated Assault	83	96	102	188	137
Commercial Burglary	121	97	139	110	154
Residential Burglary	192	144	165	199	242
School Burglary	7	8	9	5	15
Auto Burglary	166	208	254	431	407
Grand Theft	148	152	161	170	202
Vehicle Theft	85	78	71	113	139
Arson	27	13	8	18	16
Fraud	67	93	46	65	82
Narcotics	67	79	73	56	68
Sex Offenses	45	51	47	45	38
Weapon Control Laws	39	26	28	34	47
Other	88	75	76	102	129
Total Felonies Reported	1,162	1,152	1,215	1,580	1,731

Source: Novato Police Department

B. Potential Impacts and Mitigations

Criteria Used to Determine Significance

A project will have a significant impact if it:

1. Increases the need for additional police protection which exceeds the ability of the agency to provide.

Impact 4.12-A New development will require police protection.

New residential and commercial/industrial development will increase the calls for police assistance. While various types of development generate more demands for police assistance than others (for example, multi-family residential development generates more calls per unit than single-family residential development), the general effect of continued development will be an overall increase in calls for assistance. This is a potentially significant impact.

To maintain the ability to respond to all life-threatening calls for assistance within three minutes and to respond to 70 percent of other calls for assistance within thirty minutes, the

Department must maintain a minimum of 1.1 officer per 1,000 people. Total buildout within the Sphere of Influence could result in an eventual City population of about 67,000 people. To maintain current levels of service, the Department would require 74 officers at that time.

If the sworn officer to population ratio is less than 1.1 officer per 1,000 people, this would be considered a significant impact. In addition, there would be the need to employ additional nonsworn personnel (e.g., dispatchers and clerks) to maintain the existing ratio of one nonsworn staff member per three officers. Finally, there would be the need to purchase additional vehicles and other equipment required for new officers.

Mitigation Measures Proposed by the Draft General Plan

The Safety and Noise Chapter contains policies and programs related to police protection. These policies and programs basically state that the City will review new development applications to ensure that adequate police services can continue to be provided if the proposed project is approved. These policies and programs are described below.

SF Objective 6 Maintain effective police services.

SF Policy 22 Demand for Police Services: Review development proposals for their demand for police services and implement mitigating measures to maintain adequate police services.

SF Program 22.1: Consider the impacts on level of police services of large development proposals in the environmental review and planning process. Mitigating measures shall be implemented that may include the levying of police impact fees for capital facilities if warranted.

SF Policy 23 Maintain Adequate Civilian Employees and Equipment: Maintain sufficient civilian employees and equipment to support sworn staff.

SF Policy 24 Community Oriented Services: Continue to provide community-oriented services.

SF Program 24.1: Continue Community Outreach Programs.

The Public Facilities and Services Chapter contains recommendations on maintaining adequate public services, including the Police Department. These policies and programs are listed below.

PF Policy 3 Management of Public Facilities. Manage public facilities in conjunction with new development through continued planning and budgeting for public facilities and coordination with other agencies for the services which the City does not provide.

PF Program 1.3: Provide General Plan information to these service-providing agencies, and request determination of any service capacity needed to accommodate development called for in the General Plan. Service-provider determinations regarding service capacity will be used in making the determinations required in LU Program 7.2.

PF Objective 2 Ensure that public-service providers can continue to provide adequate public services given the additional demand from new development.

PF Policy 3 Management of Public Services. Work with public service agencies to ensure that those agencies have the means to provide services required by Novato residents and businesses.

PF Program 3.4 Monitor responses history and case load history for the Novato Police Department. Consider adding additional personnel as required to maintain an adequate of police response. Where a nexus can be demonstrated and State law allows, consider requiring a fee to finance a portion of the costs for increasing police staffing.

PF Program 3.7: As stated in LU Program 8.4, the City will support efforts by other agencies to collect equitable fees required to maintain adequate service levels.

The Land Use Chapter contains Policies 7 and 8 that state that future development should be consistent with infrastructure and public service constraints. All new development projects will be reviewed for their effects on City services. In addition, the Economic Development and Fiscal Vitality Chapter also contains policies and programs aimed at ensuring that new development pay its fair share for required capital facilities (see EC Policy 24 and Policy 25 and attendant programs). EC Policy 26 calls for fiscal impact analyses of projects.

Additional Mitigation Measures Suggested

The policies and programs of the Draft General Plan reduce this impact to a level that is less than significant. The following mitigation is suggested to further reduce the cumulative effect. However, since the review recommended in this program likely currently occurs as part of the CEQA review process, the inclusion of this program is not mandatory.

A program shall be added to Policy 22 of the Safety and Noise Chapter that states:

SF Program 22.2 Development applications shall be reviewed by the Police Department. The Police Department shall provide recommendations regarding lighting, access, and security. These recommendations shall be required of new development unless the City finds there are significant advantages, as regards environmental or planning effects, for not requiring these recommendations.

4.13 SCHOOLS

This section has been reviewed for accuracy by the Novato Unified School District.

A. Setting

Public education in Novato is provided by the Novato Unified School District. The *Existing Conditions Report* (Chapter 28) provides a detailed description of District resources. Since that report was prepared, the District has developed updated information on the status of its schools in the *Draft Facilities Use Report* (this is a draft document that has not been adopted by the District's Board of Trustees; it was used only for statistical data). The reader is referred to these two reports for a complete description of the School District's facilities.

The District currently provides education to 7,775 students at eight elementary schools, three middle schools, two high schools, one continuation high school, and one independent study education school.

The *Draft Facilities Use Report* states that District schools have capacity for a maximum of 8,446 students. Student enrollment projections included in that report indicate an enrollment decrease until 1998-1999 at which time the enrollment will begin increasing. However, District staff states that these projections should not be relied on as they assumed that new development would be completed and that the military housing would be reoccupied at Hamilton Field (Conklin, personal communication).

The District's current facility concerns relate to the aging of existing schools and the need to provide funding to maintain these facilities. There is no identified need for new facilities at this time.

The capacity and enrollment of District schools is shown in Table 28.

B. Potential Impacts and Mitigations

Criteria Used to Determine Significance

A project will have a significant impact if it:

1. Generates additional students that cannot be adequately housed and/or educated at District schools.

Impact 4.13-A New development will generate additional students that must be housed and educated at Novato schools.

Using the School District's student generation rate of 0.6383 new students per household, buildout under the Draft General Plan would generate 3,601 additional students. This would be about a 47 percent increase over the current population of 7,662 students. Averaging this buildout over 20 years, buildout would generate about 180 new students per year. This is a worst case scenario which assumes that every property within the City's Sphere of Influence will buildout to its maximum density and that all this development will occur within a relatively short time (e.g., 20 years). The District's own student enrollment

projections show a slower rate of growth. Preliminary predictions made in January, 1995 indicate a 1994-1995 student population of 7,910 growing to 8,377 students in 1999-2000. Conversations with District staff indicate that even this 94 student per year increase is an inflated growth rate since it was based on development at Hamilton Field already beginning so that occupancy began in 1998 (Conklin, personal communication).

As is shown on Table 28, District schools have a capacity for 8,446 students, using the District's maximum enrollment rates, or 784 more students than are currently enrolled. This is sufficient overall capacity to meet District-projected needs to some time in the next century. Individual schools could be affected depending on where development occurs. Capacity and enrollment for the three types of schools are summarized below.

Table 28
School Capacity and Enrollment

	<u>Capacity</u>	<u>Enrollment</u>
Elementary Schools	4,060	3,654
Middle Schools	1,968	1,896
High Schools	<u>2,418</u>	<u>2,112</u>
Total	8,446	7,662

Source: Draft Facilities Use Report (Novato United School District, 1995).
"April, 1995 Enrollment Count"

Over the longer term, there will come a time when existing campuses cannot adequately house new students. This conclusion assumes continuing growth and that the student generation rates remain at the currently predicted level. It is entirely possible that the number of students that will actually be generated will be fewer than projected due to any number of factors, including:

1. More multi-family units will be constructed than predicted in the District's projections. Households in apartments and multi-family units generate fewer school age children.
2. The national economic situation, exacerbated by housing costs in the Novato area, could result in families with fewer school-age children.
3. The student generation rate currently used by the District could be high. Other local school districts that have adopted a similar student generation rate as Novato have found that new housing is currently generating fewer students than predicted (Hickenbottom, Cotati-Rohnert Park Unified School District, personal communication).

If and when the number of students exceeds the capacity of existing campuses, the District will then have a number of options, including:

1. Add relocatable classrooms to existing campuses. Currently, there are almost no relocatable classrooms on school campuses. Conversations with District staff indicate that there is room for adding relocatable classrooms, though which campuses would be suitable and how many classrooms could be added would have

to wait until specific site assessments were conducted for each campus. Using the District's figure of 28 students per classroom, about 100 relocatable classrooms would be required to house the 2,817 students that could not be housed in existing facilities. This would include adding about 23 relocatable classrooms to the two main high school campuses (0.168×5642 du minus 306 divided by 28), 25 classrooms to the middle school campuses (0.1385×5642 du minus 72 divided by 28), and 52 classrooms to elementary school campuses ($.3318 \times 5642$ minus 406 divided by 28). Currently, the cost for obtaining a relocatable classroom and placing it on site so that it is ready to be used is about \$60,000.

2. The District could construct one or more new schools. The District currently owns two undeveloped sites in the San Marin area. However, the District is proceeding with plans to sell one of the sites (the San Carlos site). The remaining site, the San Andreas site, consists of 21.6 acres. The District has stated that a new school would not be built here unless there was sufficient population growth in the San Marin area to warrant a new school. The San Andreas site is part of the field of dreams concept - a joint venture by the City, County, and the School District to provide a planned recreation area. However, funding for this project has not been secured. The City has dedicated a buildable school site to the School District as part of Phase 2 of the Hamilton Field project.
3. The District could amend its standards to allow capacities equal to the State maximum standards. By State standards (which allow more students per classroom as well as other differences), existing campuses have a capacity of 11,385 students or 2,939 more students than can be housed on these campuses using District-adopted capacity standards. It is recognized that this option is in conflict with the current School District Board of Trustees' adopted facility standards.
4. The District could change some or all campuses to a year-round schedule. It is noted that the only school in Marin County currently operating on an alternative calendar is a Novato public school.
5. The final option would be a combination of some or all of the options listed above. For example, the District might change several schools to a year-round schedule while leaving others on the traditional schedule (to allow parental choice), add relocatable classrooms to campuses that have the room and the necessary infrastructure, and construct a new school on the San Andreas site (if, in fact, growth occurs in the San Marin area) and/or on other sites.

Fiscal Issues

The current School Facilities Mitigation Fee charged within the District is \$1.44 per square foot of residential development. There is no fee for non-residential development. Currently, the State allows a District to charge up to a maximum of \$1.72 per square foot for residential development and \$0.28 for commercial/industrial development. The District currently has collected about \$400,000 in the Developer Fee Fund (i.e., monies that can be used for constructing new schools or purchasing/leasing relocatable classrooms).

Buildout per the Draft General Plan would generate \$12,186,720 (1995 dollars). This estimate is based on a buildout of 5,642 dwelling units averaging 1,500 square feet. If the District were to conduct the required studies and adopt the mitigation fee schedule currently permitted by the State, developer fees would generate \$16,617,178 (based on the same

residential buildout at \$1.72 per square foot plus 7,360,066 square feet of commercial/industrial development at a rate of \$0.28 per square foot).

If a relocatable classroom costs \$60,000 to put into use, then the cost for 100 classrooms would be \$6,000,000. Thus, current fees would cover the basic cost of adding the required number of relocatable classrooms.

Fees would not cover the costs of constructing new schools. Typically, a 600-student elementary school will cost \$4,000,000-7,000,000, a 900-student middle school would cost \$9,000,000-12,000,000, and a 1,500-student high school would cost about \$20,000,000-23,000,000. None of these costs include acquisition of the property.

Summary

The District has sufficient capacity to meet projected enrollment until some date after the year 2000. However, the District may have to amend school enrollment boundaries and enrollment policies to ensure that particular schools are not overcrowded.

Once campuses reach capacity, the District must choose to allow more students per classroom, add relocatable classrooms, switch some campuses to a year-round schedule, or build new schools. Given the adopted educational standards for the District, adding more students per classroom is not allowed. If one or more of these options is not adopted, then there will come a time when schools will be overcrowded with consequent effects on the ability to educate the students. This would be a significant impact.

Cumulative Impacts

The area served by the School District is somewhat larger than the Novato Sphere of Influence. Most of the area outside the Novato SOI has little development potential. The one exception is the Bel Marin Keys area. There is a development proposal that would allow over 700 dwelling units in this area. This additional development potential outside the Novato SOI will aggravate potential long-term crowding problems. An earlier development proposal for Bel Marin Keys (which was denied by the County Board of Supervisors) proposed a 10-acre school site as part of the development. The School District recommended that this site be designated for future construction of an elementary school.

Mitigation Measures Proposed by the Draft General Plan

The Draft General Plan reduces the development potential in Novato, as compared to the existing General Plan, which correspondingly reduces the impact on the School District. The Public Facilities and Services Chapter of the Draft General Plan includes policies and programs that provide the basis for ensuring adequate public schooling. These policies and programs include:

PF Objective 1 Ensure that the development allowed in the General Plan is compatible with existing and planned public facilities.

PF Policy 1 Management of Public Facilities. Manage public facilities in conjunction with new development through continued planning and budgeting for public facilities and coordination with other agencies for those services which the City does not provide.

PF Program 1.3: Provide General Plan information to other service-providing agencies, and request determination of any capacity needed to accommodate development called for in the General Plan. Service-provider determinations regarding capacity will be used in making the determination required in LU Program 7.2.

PF Program 1.4: Provide information on development applications to other service-providing agencies, to enable them to assess appropriate fair share impact fees. The City will require proof of payment of these fees before issuing a building permit.

PF Objective 2 Ensure that public-service providers can continue to provide adequate public services given the additional demand from new development.

PF Policy 3 Management of Public Services. Work with public service agencies to ensure that those agencies have the means to provide services required by Novato residents and businesses.

PF Program 3.5: The City shall work with the School District to address anticipated deficits between the cost of constructing necessary new schools and the revenues generated by developer fees. Where a clear nexus can be shown between the impacts of a development and the need for new school facilities, and there are insufficient revenues to construct the new school, the City shall consider the need for additional project mitigation to be provided by the project sponsor, which may include dedication of school sites, provision of infrastructure improvements to a school site, and/or additional impact fees. These additional mitigations shall be required for new development to the degree that State law allows.

PF Program 3.6: Work with the Novato Unified School District to ensure that future school sites that may be required to serve future development are provided for in the plans for development projects.

PF Program 3.7: As stated in LU Program 8.4, the City will support efforts by other agencies to collect equitable fees required to maintain adequate service levels.

The Land Use Chapter contains a policy (LU Policy 7) that states that future growth should be consistent with infrastructure and public service constraints. All new development projects will be reviewed for their effects on public schools. The City will support School District efforts to collect equitable fees required to finance an adequate public education (LU Program 8.4).

Additional Mitigation Measures Suggested

These policies and programs reduce the impact to a level that is less than significant as far as City planning and jurisdiction can go. To ensure adequate future education is the responsibility of the School District.

To realize this goal, the School District should undertake the following tasks.

1. The School District should update its *Long Range Facilities Plan*. This update should include new student enrollment projections given the new City General Plan, a reassessment of the student generation rate, and an assessment of how to

schedule school improvements to provide for projected long-term enrollment increases. This updating is already recommended in the *Draft Facilities Use Report* prepared by the District.

2. The District should undertake a Developer Fee Justification Study Update and seek to increase developer fees to the maximum allowed under current State law. The District's Board has requested that the need for such a study be determined.
3. The District should update the *Long Range Facilities Plan* to show the projected deficit between expected revenues and costs for new school construction and develop a financing strategy (e.g., special taxes, assessment districts, etc.) to address any anticipated deficit.

District schools will not reach capacity for at least five years. This allows sufficient time to develop a long-term financing plan that ensures that the District can continue to provide a quality public education to its residents. The policies and programs in the Draft General Plan provide direction for such a strategy. The recommendations to the School District listed above further provide the approach required to mitigate this impact.

4.14 SOLID WASTE

A. Setting

A complete description of the amount of solid waste generated within the City of Novato is included in the *Appendices* of the *Existing Conditions Report*. These Appendices also include the *Source Reduction and Recycling Chapter* and *Household Hazardous Waste Chapter*, adopted by the City. These documents are summarized below.

In 1990, the City of Novato generated 53,023 tons of solid waste. Of this total, 7,873 tons were diverted (e.g., recycled), 358 tons were transformed (e.g., composted), and 44,792 tons were disposed of at the Redwood Landfill located east of Highway 101 and north of the City. Solid waste is collected by the Novato Disposal Service under the administration of the Novato Sanitary District.

Novato Disposal Service offers curbside recycling. There are additional recycling centers in the City.

The State has mandated that counties and cities develop integrated waste management elements to be incorporated in their General Plans. To this date, Marin County and its cities have adopted two elements: the *Source Reduction and Recycling Chapter* and *Household Hazardous Waste Chapter*.

The *Source Reduction and Recycling Chapter* (Marin County Planning Department, March 1992) describes the goals and programs for reducing solid waste that must be disposed of in landfills to comply with current State law. The Chapter contains a complete implementation program for the City of Novato showing how the City will divert 34.1 percent of its solid waste by 1995 and 50 percent by the year 2000. Detailed statistics on the types and amount of solid waste generated, current and proposed programs, and projections for future solid waste generation and diversion are included in the Chapter and its appendices. The Chapter contains separate sections on (1) the elements, goals, and policies, (2) the existing waste management system, (3) solid waste generation, (4) source reduction, (5) composting, (6) special wastes, (7) education and public involvement, (8) disposal facility capacity, (9) funding, and (10) integration.

The Redwood Landfill is a Class III sanitary landfill with Class II designated waste impoundments. As of 1990, the Landfill disposed of 1,006 tons per day for 260 days per year. There is currently an application to revise the existing Facility Permit for this landfill. The proposed changes in the landfill will extend the life of the site for 48 years given projected waste generation (Woodward-Clyde, July 1993).

B. Potential Impacts and Mitigations

Criteria Used to Determine Significance

A project will have a significant impact if it:

1. Generates solid waste that exceeds the existing or planned capacity of the landfill.

Impact 4.14-A Future development in Novato will generate additional amounts of solid waste.

This additional solid waste was predicted and accounted for in preparing and adopting the Source Reduction Chapter and Household Hazardous Waste Chapter already adopted by the City. These Elements contain goals, policies, and programs aimed at reducing the amount of solid waste which must be disposed of at the landfill. The landfill will have capacity to handle solid waste generated by the expanded Novato population as well as the population in other portions of Marin County well beyond the year 2000 (County of Marin, 1994, p. CF-17). Given these adopted Elements, the planned increase in solid waste is not a significant impact.

Mitigation Measures Proposed by the Draft General Plan

The City has already adopted a Source Reduction Chapter and Household Hazardous Waste Chapter for the Draft General Plan. In addition, the Environment Chapter includes the following policies and programs.

EN Objective 11: Reduce the volume of solid waste generated by the City

EN Policy 38 Solid Waste Reduction. Encourage solid waste reduction methods.

EN Program 38.1: Continue working with the Joint Powers Agreement implementing the 1992 Marin County Source Reduction and Recycling Element.

EN Program 38.2: Purchase goods containing recycled materials for City use wherever feasible.

EN Policy 39 On-Site Recycling Areas: Require on-site areas for recycling in commercial/retail, office and multi-family residential developments as required by State law.

EN Program 39.1: Continue to implement State requirements for recycling, requiring all commercial/retail, office and multi-family developments to provide on-site drop-off areas. Coordinate with the City's refuse disposal contractor or other recycling services to ensure regular pick-up.

EN Program 39.2: Revise the Zoning Ordinance to allow a solid waste recycling transfer station to locate in the Light Industrial and the Public Utilities Zoning Districts with Conditional Use Permit approval.

Additional Mitigation Measures Suggested

The policies and programs contained in the Draft General Plan ensure that the generation of solid waste that must be disposed of at a landfill will be minimized and that there is adequate disposal space for waste that cannot be reused. No additional mitigation measures are required.

4.15 RECREATION

The data in this section was extracted from Chapter 29 of the *Existing Conditions Report* and from the draft *Target 2000 Master Plan* (incorporated herein by reference). Additional data were provided by Larry Dito, Director of the City Parks, Recreation, and Community Services Department (hereafter called the Department).

A. Setting

Existing Facilities

The inventory of park and recreation facilities presented in Table 29 was originally prepared for the *Target 2000 Master Plan*. The City owns and maintains 58.5 acres of developed parks and recreation areas. In addition, the City owns 140 acres of undeveloped future park lands. The bulk of its undeveloped parkland is the 100-acre O'Hair Park site. Publicly owned park and recreation facilities within the Novato Sphere of Influence are depicted on Figure 20.

Since 1970, the Department and the Novato Unified School District have co-developed recreation areas at numerous elementary, middle, and high school sites, providing another 15 acres of play fields and neighborhood parks. Within its inventory of public land, the City has title to approximately 550 acres of public open space. During 1986/87, title to 470 acres of open space was transferred to the Marin County Open Space District. In 1990, the average cost for maintaining one acre of parkland for one year was \$10,000. This reflects direct costs for operation and maintenance as well as indirect costs such as overhead and capital replacement.

Table 29

Inventory of Recreational Facilities

CITY-OWNED PARKS

Mini Parks (Total of 7.05 acres)	Acreage
Bahia Mini Parks (6)	1.0
Creekside Park -Pacheco Valle	4.0
Fairway Alameda	0.3
Joyce Stewart Tot Lot	0.25
Olive/McClelland	0.25
Olive/Elmwood Tot Lot	0.25
Pansy Tong Lo	0.75
Partridge Knolls Tot Lots (2)	0.5
Robin Hood Tot Lot	0.25
 Neighborhood Parks (Total of 14.2 acres)	
Arroyo Avichi Park	1.0
Marin Highlands Park	4.1
Lee Gerner Park	2.0
Marion/Stafford Grove	3.0
Slade Park	3.1

Hillside Park	1.0
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District Parks (Total of 24.75 acres)

Josef Hoog Park	10.0
Miwok Park	6.0
Pioneer Memorial Park	8.75

Specialized Facilities

Margaret Todd Senior Center

Description

13,000 sq. ft.. multi-service Senior Citizen Center

Babe Silva Field

Little League field.

Hill Recreation Area

Soccer and softball fields, 2,400 sq. ft. multi-purpose room, and 7,000 sq. ft. gymnasium

Marin Museum of the American Indian

Located at Miwok Park, local Cultural Resources Museum.

Novato Community House

4,000 sq. ft. multi-purpose center and performing arts building.

Novato History Museum

Local history and archives.

Novato High Pool

City-owned pool on NHS campus.

Novato Youth Gymnastics Centers

10,000 sq. ft. center leased and operated by the City.

Hill Gymnasium

Youth and adult basketball, volleyball at Hill Recreation Area.

Child Care Center

At Lu Sutton School, year-round child care program

JOINTLY-DEVELOPED FACILITIES

Indian Valley Campus

6 tennis courts, 50-meter pool. Future site: 2 soccer and softball fields.

Lu Sutton School Recreation & Pinheiro Field

Little League field, soccer field, softball field.

Lynwood School Recreation Area

2 softball fields.

Olive School/Hamman Field

Little League field, neighborhood park.

Pleasant Valley School Recreation Area

Little League field, soccer field.

San Ramon School

Multi-use youth playfields for soccer, softball, baseball

CITY OWNED - UNDEVELOPED

O'Hair/Fuchs

100-acre park site. Park master plan adopted 1986, precise plan underway.

Lynwood Hill

12.3-acre hilltop site. In tandem with Scottsdale Pond - future district park.

Scottsdale Pond

14-acre freshwater pond and marsh. In tandem with Lynwood Hill - future district park.

Scottsdale Marsh

30-acre wetland adjacent to Scottsdale Pond. Enhancement plans pending.

San Andreas Park Site

4.5-acre site adjacent to 20 acre-undeveloped school site on San Andreas/San Marin Drives.

Pacheco Valle	Future "Community Facility" bisected by access road to Pacheco Valle tennis court complex atop NMWD storage tanks. 2.37 acres.
Redwood/Crossroads	Joins the end of Redwood Boulevard with Crossroads development. 2 acres.
Park Novato	1.3 acres along Arroyo Avichi Creek, behind Rancho School. Hill Street widening project will limit development.
Pell Property	0.88-acre future mini or neighborhood park site deed to City, on South Novato Boulevard.
Terry Circle	Adjacent to City open space. Approximately 0.6 acre.
Fairway Drive - Arroyo San Jose Park Site	1.34-acre site deed to City as mini park for future residential development.
Hamilton Parks	4.5 acres on Hamilton Field

COMMERCIAL OWNED FACILITIES/

NON-CITY FACILITIES

Nave Bowling Lanes
 Olive Ridge Tennis Club
 Rolling Hills Country Club
 Marin Golf & County Club
 Indian Valley Golf Course
 Novato Theater
 Indian Valley Campus Pool
 Indian Valley Campus Tennis Courts
 Marin County - Stafford Lake Park
 Marin County Boat Launch Facility at Black Point, Petaluma River
 Rowland Plaza Theater
 Novato Youth Center

NON-CITY OWNED RECREATION AREAS (SCHOOLS)

Hamilton/Meadowpark Elementary School	2-acre playfield Multipurpose room
Loma Verde Elementary School	2-acre playfield Multipurpose room
San Ramon Elementary School*	4-acre soccer, softball fields
San Jose Middle School	Soccer/football field Softball field; Multipurpose/gym
Sinaloa Middle School	4 acres playfields 2 lighted tennis courts Multipurpose/gym

Novato High School*	6 acres playfields Baseball field, softball field Soccer field 8 tennis courts Municipal pool 2 gyms
San Marin High School*	6 acres playfields 1 softball, 2 baseball, football 3 tennis courts Gym

*Partially developed for recreation by City.

Source: Draft Target 2000 Master Plan, 1990 and input from Novato Parks, Recreation and Community Services Department.

Special Community Facilities

Neil O'Hair Park

The City of Novato prepared and adopted the Neil O'Hair Park Master Plan in 1986. This was the second master plan prepared for the 100-acre park site. The original plan, commissioned in 1976, proposed a wide range of passive and active recreational uses for the site. However, changing values and recreational interests within the community led to revision of the initial plan. The adopted Neil O'Hair Park Master Plan places more emphasis on preservation of the natural qualities of the site and concentrates recreational development on 30 acres of the 100 acre site. The City has plans to develop a Precise Plan to guide implementation of the Neil O'Hair Park Master Plan in 1995-1997.

Community Facilities - Recreational, Cultural, and Aquatic

Currently, Novato's only Community Center facility is the 5,000 square foot Community House, built in 1929. Demand for this facility far exceeds available time, and virtually no time is available for rentals, private parties, and City-sponsored programs.

To adequately serve the community's needs, a Community Center would provide both indoor and outdoor activity spaces, have at least 20,000 square feet of indoor space and be available year round for day and evening use. Ultimately, facilities for aquatics, gymnastics, and other specialized activities should be developed.

Performing Arts Theater

While Novato residents enjoy the benefits of an active performing arts community, the only live theater venue in the City is the Community House. Demand for this facility often drives local performers to find private theater space. This situation could be eased through the construction of a new Community Center facility that would "free-up" time at the Community House.

Creekside Parks

The 1976 Novato General Plan called for the aggressive acquisition of creekside lands for public access parkways. This program has since met with resistance from the community

FIGURE 20 RECREATIONAL FACILITIES

Scale: 1" = 4000'

N

● Facility Locations

MINI-PARKS (7.05 Acres)

- 1 Bahia Mini-Parks (6)
- 2 Creekside Park-Pacheco Valle
- 3 Joyce Street Tot Lot
- 4 Olive/Elmwood Tot Lot
- 5 Pansy Tong Low Tot Lot
- 6 Partridge Knolls Tot Lots (2)
- 7 Knoll Top Tot Lot
- 8 Hillside

NEIGHBORHOOD PARKS (13.20 Acres)

- 9 Arroyo Avichi Park
- 10 Marin Highlands Park
- 11 Lee Gerner Park
- 12 Marion/Stafford Grove
- 13 Slade Park

DISTRICT PARKS (24.75 Acres)

- 14 Josef Hoog Park
- 15 Miwok Park
- 16 Pioneer Memorial Park

SPECIALIZED FACILITIES

- 17 Babe Silva Field
- 18 Hill Recreation Area, gym, community room
- 19 Marin Museum of the American Indian
- 20 Novato Community House
- 21 Novato History Museum
- 22 Novato High Pool
- 23a Novato Fitness & Gymnastics Center (Novato Blvd.)
- 23b Novato Fitness & Gymnastics Center (Bel Marin Keys)
- 24 Indian Valley Pool
- 25 Lu Sutton School Recreation & Pinheiro Field
- 26 Lynnwood School Recreation Area
- 27 Olive/Hamman Field
- 28 Pleasant Valley School Recreation Area
- 29 Margaret Todd Senior Center (located at Hill Recreation Center)

SOURCES: Marin County General Plan, and
Novato Community Services Department

City of Novato General Plan Revision
Draft
Environmental Report

----- City Limit Line
..... Sphere Of Influence

Revised & Recirculated
November, 1995

This map was developed for General Plan purposes. The City of Novato is not responsible or liable for use of this map beyond its intended purpose. More detailed information is available at the Novato Community Development Department.

in a number of ways. Property owners along creeks have not been happy with unlimited public access.

While the potential benefits of creekside parks are considerable, there is a lack of comprehensive and coordinated planning for the development and management of such linear parks. Realistic goals and project priorities need to be established. This could be accomplished through development of a City-wide specific plan addressing creekside parkways and public access policies.

Conservancy

Conservancy areas are established to protect, preserve, and manage important natural resource areas with recreation as a secondary objective. The City has pursued acquisition of the 33-acre Scottsdale Marsh for purposes of preservation and enhancement.

Current Status of Major Citywide Facilities

Department staff has been working with focus advisory groups to determine how to build the major facilities that Novato residents have stated they want. The five major facilities include a gymnasium, gymnastics center, performing arts center, community center, and a swimming pool(s). There are currently \$4,500,000 in the Community Facilities Fund. Department staff and the advisory groups have agreed that this money should be used in the following fashion:

1. Combine the gymnasium and gymnastics center under one roof and build a center. The City will use \$1.0 million from the fund and take out a loan for another \$1.0 million. Loan payments will be made from revenues generated by the gymnastics program.
2. Combine a performing arts center and community center under one roof and construct one building. The location depends on what the final Downtown Specific Plan recommends. The City will have \$2.0 million available for this project.
3. The City will not build a new swimming pool. Instead, the City will spend \$400,000 to refurbish the IVC and Hamilton Field (when the City takes over Hamilton) pools.
4. The City has limited operating funds to maintain these facilities. So, \$1.0 million will be put in maintenance fund, and the interest in combination with user and program fee revenues will be used for maintenance of these facilities.

Playfields

In addition to the facilities shown on Table 29, the Department is currently involved with several projects to add playfields. These include:

1. The department is attempting to build 2 soccer/softball fields at IVC. The EIR on this project will undergo public review in the summer of 1995. If this project is not approved by the City, then the money could go to develop the Hamilton Field athletic center (see below).
2. There will be a park site on Phase 2 of Hamilton Field. The Department plans to build an athletic complex on this site. The City anticipates receiving \$1.4 million

from Park Development fees for park development; this will be used for developing the first phase of an athletic complex. The Department estimates that full development of this complex will cost about \$8 million.

3. The City will develop a precise development plan for O'Hair Park in 1996-1997. The park will include new ballfields.
4. The Marin County Open Space District is attempting to form an assessment district to purchase the Brookside property. In an agreement between MCOSD and neighborhood and user groups, the upper slopes will be owned by the Open Space District and the lower area will be developed for athletic fields and a dog park. This project depends on successful formation of the assessment district.

Parkland Dedication Ordinance

Pursuant to City Ordinance 1124, Municipal Code Section 9-19.004, the City requires dedication of land or in-lieu fees provided by developers of all subdivisions.

Fees collected are deposited into the City's Subdivision Park Trust Fund and can be used only for purposes of park acquisition, planning, development, or rehabilitation.

Lands dedicated under this ordinance must be located in whole or in part within the proposed subdivision or serve the immediate and future needs of the residents of the subdivision or within the park or appropriate planning district as identified in the Park Planning District Map (on file with the City).

Novato's Park Dedication Ordinance specifies that 4.5 acres of parkland be dedicated for every 1,000 residents anticipated in the new subdivision. In-lieu fees are adjusted annually and are based upon the average cost of one acre of undeveloped land within Novato.

Draft Target 2000 Master Plan

The City of Novato's *Target 2000* park and recreation facilities master plan is currently in the Public Review Draft phase. The Master Plan establishes the City's Goals and Policies for addressing recreational needs and will offer specific strategies and implementation steps to achieve stated goals. The goals below are presented with additional explanations within the Draft *Target 2000* Master Plan.

- Maintain a current Master Facilities Plan
- Maintain an Effective Park Dedication/In Lieu Fee Process
- Maximize Public Involvement
- Maximize Recreation Opportunities
- Evaluate the Recreational Potential of Sites which are Declared Surplus
- Maintain all City Facilities in Safe and Attractive Condition
- Seek the Support of User Groups
- Contract for Facility Maintenance when Appropriate
- Plan and Conduct Recreational Programs
- Assist Other Recreation Providers
- Pursue Cost-Effective Recreation Programs
- Use All Available Public Facilities
- Coordinate Acquisition Planning and Development
- Coordinate Local Trail Planning Efforts
- Preserve Novato's Historic Structures and Sites

Define Public Access and Use

Establish and Maintain a Management Program for City's Open Space Areas

Seek Diverse Funding Methods

Since the completion of the draft *Target 2000* plan, the Department has modified certain objectives defined in that plan. The current objectives include:

1. Concentrate on improving existing parks rather than acquiring new park sites. This is because there is inadequate funding to implement the projects recommended in *Target 2000* which are needed to serve existing residents.
2. Consider amending the ordinance regarding in lieu fees to allow a certain percentage to be used for parks and recreational facilities that meet citywide objectives.
3. Consider adopting an ordinance to allow the collection of in lieu fees from new commercial and industrial development to provide greenways near that new development.
4. Consider increasing in lieu fees to cover the actual cost of park construction. It is estimated that park development in Novato currently costs \$200,000-250,000 per acre (exclusive of land acquisition costs). Currently, in lieu fees from new residential development provide about half this cost.
5. Concentrate on developing larger parks rather than small neighborhood parks. The cost of maintaining small parks is too expensive.

County Open Space

Marin County, working under the 1965 *Parks and Recreation Plan 1990 Outdoor Recreation Plan for Marin County*, has pursued the establishment of a regional park system for Marin County. Both State and Federal park acquisitions have contributed to the achievement of this goal, and the Marin County Open Space District has been an effective mechanism for acquisition and preservation of County open space. The Marin County Open Space District, working in conjunction with local agencies and County service areas, has acquired more than 14,000 acres of land on ridges and hillsides in the County. About 8,000 acres of open space preserve are within or adjacent to the Novato Sphere of Influence.

In addition to continued support for regional recreation and open space, the County is proposing to increase support for local communities and districts and to assist these jurisdictions with providing local parks and recreation facilities. The local communities have been evaluated in order to assist with planning of park and recreation facility improvements. Based on standards established under the maximum dedications of the Quimby Act, the County estimates a shortage of 56 acres of parks within the Novato community (based on a 5 acres of parks per 1,000 residents standard). The County has identified those portions of individual communities which are currently lacking adequate park and recreation areas. All neighborhoods within Novato are considered to be underprovided with parks. Additionally, the Countywide Plan notes that all active recreation areas, Community Centers, and school sites with athletic fields are overused.

Trails

Marin County is committed to maintaining and expanding a trails network throughout the County for the recreational benefits of residents and visitors of the County. Currently, the County has 464 miles of trail established, including 26 miles of paved pathways. The County has also secured 47 miles of trail right-of-way (*Marin Countywide Plan*, Trails Chapter). The Countywide Plan calls for an additional 211 miles of trail, which would bring total publicly accessible trails within the County to 722 miles. The Trails Chapter of the Countywide Plan provides a series of trails maps which cover the entire County.

The Novato Department of Parks and Recreation has no plans for trail development other than continued support of the existing and proposed trails identified in the Countywide Trails Plan. In addition, the City supports development of the Bay Area Ridge Trail which is a proposed trail that will encircle the Bay on ridges. There is no defined route through Novato, but the proposed route would link Mt. Burdell with Big Rock Ridge. The Department also supports the proposed Bay Trail which is shown on Figure 21.

B. Potential Impacts and Mitigations

Criteria Used to Determine Significance

A project will have a significant adverse effect on recreational facilities if it:

1. Generates recreational needs that cannot be met within the Novato area.
2. Substantially interferes with public access or use of a site designated for recreation uses.

Impact 4.15-A An increasing population will increase the demand for recreational facilities.

If no new recreational facilities or opportunities are developed, then the new population resulting from buildout of all properties in the City will overstrain existing facilities. This is especially true since there is an existing shortage of various types of recreational facilities in Novato. As noted previously, the Parks Department has insufficient funds to construct park improvements on existing parks to meet the needs of existing residents. Without additional revenue sources, it is likely that there will be insufficient parks and recreational facilities to meet an expanded population. This is a potentially significant impact.

Mitigation Measures Proposed by the Draft General Plan

The Environment Chapter contains an extensive list of policies and programs aimed at ensuring adequate parks and recreational facilities for future use. These policies and programs are listed below.

EN Objective 14 Provide an attractive and comprehensive system of parks and trails throughout the city to meet the recreational needs of all age groups and capabilities.

FIGURE 21

TRAILS



SOURCES: Marin Countywide Plan,
ABAG, and
Novato Community Services
Department

City of Novato General Plan Revision
Draft
Environmental Report

--- City Limit Line
..... Sphere Of Influence

Revised & Recirculated
November, 1995

This map was developed for General Plan purposes. The City of Novato is not responsible or liable for use of this map beyond its intended purpose. More detailed information is available at the Novato Community Development Department.

EN Policy 44 Park and Recreation Facilities. Develop and maintain to the maximum extent possible given available resources a system of parks to meet the needs of Novato residents.

EN Program 44.1: Review, and if necessary revise, the 1992 report Target 2000, as a guide to the development of park and recreation facilities in the City. (See Novato Neighborhoods Appendix for more detailed recommendations.)

EN Program 44.2: Coordinate recreation programs with the Novato Unified School District, other public and non-profit agencies, and commercial recreation facilities.

EN Program 44.3: Require adequate parking and facilities for transit access at all recreation facilities.

EN Program 44.4: Require design of screening, lighting, and noise protection to reduce impacts on nearby neighborhoods.

EN Program 48.5. Review and update regulations establishing impact fees for residential development to provide a fair share of the costs of park and recreation facilities.

EN Program 44.6. Conduct a nexus study to investigate the feasibility of establishing impact fees for non-residential development to provide a fair share of the costs of parks and open space.

EN Program 44.7: Consider geoseismic and other potential hazards prior to City acceptance of dedications of land for park or open space. Identified hazards shall be fully repaired and/or financial protection for liability provided to the City before acceptance of land.

EN Policy 45 Existing Park Land and Facilities. Continue to emphasize improvement of the City's extensive holdings of undeveloped parkland over the acquisition of new land for parks and open space.

EN Program 45.1: Develop a financial plan to improve undeveloped park land, maintain existing facilities, and acquire land for new parks in underserved neighborhoods.

EN Policy 46 Hamilton Field. Develop and rehabilitate appropriate parks and recreation facilities on portions of Hamilton Field that become City-owned.

EN Policy 47 Greenways. Provide a system of greenways, consisting of natural lands, open space, watersheds, forests, landscaped borders, and landscaped pathways for pedestrians and bicycles. Greenways should connect major open space areas, including perimeter open space, creeks, Stafford Lake, O'Hair Park, and Scottsdale Pond, with the developed parts of the City.

EN Program 47.1: Consider developing a Greenways Plan indicating locations and design criteria for a City-wide system, including consideration of privacy issues along creeks and in other developed areas.

EN Policy 48 Annual Review of Open Space, Parks, and Trails Acquisition. Review the status of open space, parks, and trails acquisition and development.

EN Program 48.1: Prepare a report for the City Council and the Parks and Recreation Commission on the status of the acquisition and the improvement of parks and trails, including a list of existing and proposed projects, estimated cost and sources of funding. Determine what additional actions, if any, may be necessary to implement the policies of this Chapter.

EN Program 48.2: Develop a financial plan for the improvement and maintenance of an urban trails system.

EN Policy 49 Integrated Trails System. Facilitate the development of an integrated trails system that connects regional trails, schools, open space, parks, recreation facilities, and residential areas. (See Transportation Chapter.)

EN Program 49.1: Continue to develop and enlarge a comprehensive and coordinated trails and paths system that serves both recreational and utilitarian travel.

EN Program 49.2: Consider the access needs of a variety of users, including school-age children, the elderly, and those with disabilities when designing trails and paths.

EN Program 49.3: Minimize impacts to habitats and wildlife in planning, construction and operation of trails.

EN Program 49.4: Require new developments to provide direct pedestrian connections to parks and trails and to dedicate portions of the mapped trail system that extend through the property, consistent with nexus considerations and applicable laws.

EN Program 49.5: Work with the Marin County Open Space District and the Association of Bay Area Governments to implement the trail system described in the Marin Countywide Plan and the Bay Trail.

EN Program 49.6: Work with the Bay Area Ridge Trail Council to implement the Novato portion of the Bay Area Ridge Trail, encircling San Francisco Bay on ridge lines.

EN Objective 15: Improve and enhance recreational and cultural facilities and opportunities.

EN Policy 50 Community Facilities. Continue efforts to provide various community facilities addressing recreational and cultural needs.

EN Program 50.1: Adopt a plan for development of public facilities, including a community center, performing arts facility, gymnastics, gymnasium, and aquatic facilities.

EN Program 50.2: Coordinate plans for community facilities with policies of the Downtown Specific Plan.

EN Program 50.3. Plan for the expansion of the City History Museum on DeLong Avenue in accordance with policies of the Downtown Specific Plan.

EN Program 50.4. Plan for development of sports facilities and community playfields to meet the needs of youth and adult athletic programs.

EN Program 50.5. Continue to work closely with the Rancho Olompali organization concerned with planning and improving the historic park, and the State Parks Department to enhance the park.

The Land Use Chapter contains LU Policies 7 and 8 which require the City to assess public services and infrastructure when assessing new development applications. While these policies do not explicitly mention recreational facilities and services, it is assumed that recreational facilities and services will be considered along with all other public facilities and services.

Additional Mitigation Measures Suggested

The policies and programs listed above along with the growth management provisions included in Land Use Policies 7 and 8 ensure that adequate recreational facilities will be provided to future residents. These policies and programs reduce the impact to a level that is less than significant, and no additional mitigations are required.

4.16 ENERGY

A. Setting

The *Existing Conditions Report* (Chapter 21) provides a description of current energy usage in Novato. Energy use is typical of any California community. Energy is used for construction, manufacturing, commercial, and domestic uses. Transportation, especially private autos, use significant amounts of energy.

PG&E maintains a number of electric transmission lines in the Novato area. The location of high voltage lines is shown on Figure 20.1 in the *Existing Conditions Report*.

B. Potential Impacts and Mitigations

Criteria Used to Determine Significance

A project will have a significant adverse impact if it:

1. Encourages activities which result in the use of large amounts of fuel or energy.
2. Uses fuel or energy in a wasteful manner.
3. Exposes people to harmful electromagnetic fields.

Impact 4.16-A An increasing population will increase the demand for fuel and energy.

Future development in Novato must comply with the State's Title 24 Building Standards Program which ensures that new buildings meet current energy conservation requirements. In addition, the City Code requires that new subdivisions be approved only if the development provides for future passive or natural heating and cooling opportunities (Chapter 9-7.002)

The Draft General Plan contains policies aimed at providing efficient circulation and increased use of public transit. These policies will reduce the amount of fuels required for private vehicles. The Draft General Plan also expands public trails and bikeways which will likewise reduce fuel consumption. The Draft General Plan also encourages the use of solar energy. The Draft General Plan ensures that fuel and energy is used in a relatively efficient manner. While it is desirable to continue to investigate means of further reducing fuel and energy consumption, there is no evidence that the Draft Plan will result in a wasteful use of these resources. As such, there will not be a significant impact.

Mitigation Measures Proposed by the Draft General Plan

The Transportation Chapter contains numerous policies and programs to encourage alternative transit, including various forms of mass transit, bicycles, and walking. Objective 5 of that Chapter is "Reduce dependence on the automobile." There are a variety of policies and programs proposed to meet this objective. Objective 6 states, "Make it easier for people to travel by bicycle and on foot." Again, there are numerous policies and programs proposed to meet this objective. All these policies and programs will encourage transit modes other than the private auto, and this alternative transit will reduce the use of gasoline.

The Environment Chapter includes the following policies and programs which encourage efficient energy use:

EN Objective 8: Reduce dependence on non-renewable energy and materials.

EN Policy 28 Energy Conservation. Consider land use patterns and policies that promote energy conservation.

EN Policy 29 Energy Conservation Measures in Buildings. Reduce energy consumption by requiring structures to meet the energy conservation requirements stipulated in the State Building Code and State Title 24 regulations.

EN Program 29.1: Adopt a program to encourage retrofitting of energy-saving features in existing structures by providing information, technical assistance, and other incentives.

EN Program 29.2: Review, and if necessary revise, planning and regulatory documents to consider if they adequately promote energy efficiency, use of renewable resources, and protection of solar access.

EN Policy 30 Energy Efficiency in Public Programs. Assure energy efficiency in local government operations.

EN Program 30.1: Continue to conduct energy management studies to evaluate opportunities for energy savings and use of local renewable sources.

EN Program 30.2: Consider energy conservation measures in the design of capital improvement projects.

EN Policy 31 Development Review Process. Consider energy conservation in the development review process.

EN Program 31.1: Consider adopting a solar access ordinance that would require all development applications to be reviewed for potential energy conservation measures and design, including site orientation, building design and use of materials, landscaping and solar access.

EN Program 31.2: Make available to the public information on energy-efficient design features.

EN Program 31.3: Make available to the public PG&E literature on energy conservation.

EN Program 31.4: Analyze energy consumption aspects of site design and service delivery, such as drive-up windows.

Additional Mitigation Measures Suggested

The proposed policies and programs in the Draft General Plan will ensure that energy is not used in a wasteful manner. There is no significant impact, and no further mitigation is required.

Impact 4.16-B New development could place people at risk from exposure to electromagnetic fields.

The potential adverse health effects of electromagnetic fields (EMFs) from electric transmission lines, substations and appliances have been documented in many studies. The Environmental Protection Agency (EPA) concluded in a recent report, *Evaluation of Potential Carcinogenicity of Electromagnetic Fields*, that there is a causal relationship between certain forms of cancer and exposure to 60 Hz magnetic fields from power lines and perhaps other sources in the home. There is no consensus in the scientific community, however, regarding the degree of risk presented by EMF. This EIR considers exposure to EMFs to be a potentially significant impact.

It is not conclusively known what levels of exposure to EMF are safe. The approach taken to this potential health hazard is one of prudent avoidance by establishing reasonable regulations before transmission lines are built and discouraging development from encroaching in or near to electrical transmission line right-of-ways. It is also necessary to obtain updated information on EMF radiation levels of existing and proposed electrical transmission facilities and relate those to the latest standards that are emerging from ongoing research. Figure 20.1 in the *Existing Conditions Report* shows the location of the high-voltage transmission lines in the City. The Pacific Gas and Electric Company has submitted data on current research on EMFs. These data are included in the Appendix to this EIR.

Mitigation Measures Proposed by the Draft General Plan

The Safety and Noise Chapter contains the following:

SF Objective 9 Reduce community exposure to electromagnetic field radiation.

SF Policy 31 Consider Electromagnetic Field (EMF) Radiation in Land Use Decisions: Consider information regarding EMF radiation from new electrical transmission lines and substations in making land use decisions.

SF Program 32.1: Consider adopting EMF regulations consistent with State or Federal guidelines, if they become available.

SF Program 31.2: Obtain updated information on EMF radiation levels of existing and proposed electrical transmission facilities and relate those to the latest standards that are emerging from ongoing research. Refer to SF Map 5; Major Electric Transmission Lines.

SF Policy 32 Siting and Construction of Electrical Transmission Facilities: Consider EMF issues near sensitive areas such as schools, hospitals, playgrounds in planning for electrical transmission facilities .

SF Program 32.1: Request that PG&E provide information to the City on renovations to existing and construction of new electrical transmission lines, substations, and distribution lines. Request that information on the EMF radiation levels for proposed new facilities be provided.

SF Program 32.2: Require that all new electrical transmission projects have an EMF mitigation plan as an part of the project's environmental review pursuant to CEQA.

SF Program 32.3: Request from PG&E an inventory and full public disclosure of existing electrical transmission lines and of existing and proposed electrical transmission projects with the anticipated EMF levels in the Novato Planning Area.

SF Policy 33 Siting of Schools: Encourage the Novato Unified School District to continue enforcement of the California Department of Education regulations requiring EMF consideration in the siting of schools.

Additional Mitigation Measures Suggested

The policies and programs proposed in the Draft General Plan ensure that the City will assess EMF-related effects when considering new development. These policies and programs will reduce this impact to a level below significance. No additional mitigation is required.

4.17 LAND USE

A. Setting

Chapter 9 of the *Existing Conditions Report* contains a complete description of existing land use in Novato. The following is a summary of that longer description.

The Novato Planning Area is framed by a network of open space. Within the Planning Area, Ignacio Valley and Indian Valley Open Space Preserves form the southwestern edge; Verissimo Hills Open Space Preserve, O'Hair Park Site and Mt. Burdell Open Space Preserve form the northwestern edge; Pacheco Valley and Loma Verde form the southeastern edge, while Petaluma River and San Pablo Bay form the eastern and northeastern edges. Immediately beyond the mapped Planning Area are a number of open space areas as well - Indian Tree Open Space Preserve (west), Stafford Lake (northwest), Rancho Olompali State Historic Park (north), Lucas Valley Open Space Preserve (southwest), open space areas owned by Lucas Valley Homeowners Association and Marinwood Community Services District (south).

The nearest incorporated city to the south is San Rafael, the Marin County seat, which is directly south of Novato. San Rafael is the government and commercial center for the county. It has a balanced land use composition of residential, commercial and industrial. The nearest incorporated community to the north is Petaluma, the southernmost city of Sonoma County. Petaluma is characterized by mostly residential development, though its commercial and industrial land uses provide balance to the community. Unincorporated areas on all sides of Novato are comprised of publicly-owned open space lands, agricultural lands (many of which are preserved under Williamson Act contracts with Marin County), rural residential uses, and waterways, including San Pablo Bay and Petaluma River.

Growth Rate of County

Overall, the County of Marin has grown by 5.5 percent since 1985, with an average population increase of 2,473 residents per year. Between 1980 and 1990, the County of Marin grew from 222,568 to 230,100 (ABAG, 1994). Novato had the fastest growth rate countywide over the course of the past five years (1985 to 1990) at 9.3 percent, as well as the greatest numerical growth (from 44,610 to 48,741, an increase of 4,131); this growth averages to be an annual population increase of 826 (*Novato Community Profile*).

Marin County is part of the nine-county Bay Area and the Association of Bay Area Governments (ABAG). ABAG prepared *Projections 90: Forecast for the San Francisco Bay Area to the Year 2005*, which summarizes the Bay Area's growth and future projections. According to ABAG's *Projections-90*, the region's population grew from 3.6 to 5.2 million people between 1960 and 1980, at a compound growth rate of 2.1 percent. This growth rate decreased to 1.4 percent during the 1980s as the Bay Area's population increased to 5.9 million. The total population is expected to reach 6.8 million by 2005, an increase of about 15 percent, or 0.9 percent compounded annually over the fifteen year period (1990-2005). In 1960, the North Bay Counties accounted for 9.56 percent of the Bay Area's population; in 1990, this had increased to 13.7 percent.

The Novato study area had an increase of 22 percent more jobs during the period 1985-1990 (second in Marin County to San Rafael for absolute numbers, and Corte Madera for percent change). During this same period, the number of households and number of

employed residents increased by 14 percent and 16 percent, respectively. The majority of jobs came from the service sector (1,550, or a 23 percent increase), although the greatest percentage change was in the area of retail (31 percent, 1,020 jobs).

Existing Land Use and General Plan Designations

Existing land use calculations were completed for four generalized land use categories: residential, commercial, office and industrial, and agricultural. In Chapter 9 of the *Existing Conditions Report* (Chapter 9) there is a comparison of these existing land use categories with the City of Novato and the Marin Countywide Plan land use designations.

Existing Land Use

Table 30 is a summary of existing land use in Novato.

Table 30
Existing Land Use Summary

Existing Land Uses	City Limits		Sphere of Influence		Total	
	Acres	% /City	Acres	% of SOI	Acres	% /Total
Residential Total	4,593	29.0	1,963	28.4	6,556	28.8
Single Family	4,393	27.7	1,781	25.8	6,174	27.1
Multi-Family	200	1.3	182	2.6	382	1.7
Business Total	789	5.0	197	2.9	986	4.3
Office	98	0.6	1.5	0.1	99	0.4
Commercial	575	3.6	100	1.4	675	3.0
Industrial	117	0.7	96	1.4	212	0.9
Public Facilities	2,912	18.4	89	1.3	3,000	13.2
Agricultural	1,452	9.2	2,747	39.7	4,198	18.5
Open Space	3,978	24.8	1,003	14.5	4,981	21.7
Private Nontaxable	261	1.6	42	0.6	303	1.3
Vacant/Undeveloped Land	1,909	12.1	864	12.5	2,773	12.2
Totals	15,893	100%	6,905	100%	22,798	100%

Source: City of Novato, 1994

The following is a description of the land uses shown in Table 30.

Residential - Residential development has occurred west of the Highway 101 corridor being mainly confined to the valley areas defined by Big Rock Ridge and Mt. Burdell. Large pockets of residential development also exist east of Highway 101, but have been limited to the moderately sloping land scattered along the edges of the San Pablo Bay historic floodplain. Residential land use accounts for 4,593 acres or about 29 percent of all land within the City Limits. Within Novato, the number of single family detached on lots under one acre in size is the most predominant type of residential use at 4,393 acres or 28 percent; however, with the increasing cost of land, the limited availability of developable land, and sustained economic pressures for more homes, the number of single family attached (townhomes) and multi-family developments (condominiums, apartments) has grown and is currently at 200 acres or 1.3 percent of City land.

Commercial - Local commercial activity is located downtown, along Redwood Boulevard, in pockets along the Highway 101 corridor and in small clusters of independent uses (i.e., Rowland Boulevard at South Novato Boulevard, Nave Drive and Bolling Drive). Convenience shopping for neighborhoods is provided at the following centers: Novato Downtown Center, Novato Faire, The Square, San Marin Plaza, Nave Center, Pacheco Plaza, and the Ignacio Center. The Vintage Oaks Shopping Center, a 635,000-square foot regional center, is located on Highway 101 south of the Rowland Boulevard interchange. Commercial land use accounts for 575 acres or about 3.6 percent of all land within the City Limits.

Office - Office uses are located in and around downtown, on Hill Road, around the Novato Community Hospital, along Novato and South Novato Boulevard and distributed within the industrial parks. Office uses occur almost exclusively within the City Limits on 98 acres or 0.6 percent of total City acreage.

Industrial - Novato Industrial Park (sometimes called Bel Marin Keys Industrial Park) contains the bulk of Novato's warehousing, distribution, and manufacturing uses with a few industrial sites scattered outside of the City Limits within the Planning Area. Several industrial operations remain inside the downtown area between the railroad and Redwood Boulevard; however, the industrial role of downtown is diminishing and being replaced with more specialized community service and administrative functions. Two other industrial sites are located in the incorporated area - one just north of the San Marin/Atherton interchange and another just east of the Atherton interchange south of Highway 37 near Black Point. Most of the office/industrial uses occur within the City Limits. Office/Industrial land use accounts for 117 acres or about 0.7 percent of all land.

Agricultural Uses - Agricultural land use can be found primarily in the unincorporated areas of the Novato Planning Area south of Bel Marin Keys extending out to the edge of San Pablo Bay, on the northern end of the city adjacent to the Gness Field and within the Indian Valley area. This land use has played a large part in shaping the Novato community. Livestock husbandry, dairy farming, greenhousing, nut crops, and limited feed-crop agriculture continue to be among the basic resource activities of the area and remain as a valuable asset to the community. Agricultural land use accounts for 4,198 acres or about 19 percent of land within the City and SOI.

Public Facilities - Parks, public buildings, and other publicly owned, tax exempt parcels, fall under the public facilities land use category. They include City, Novato Unified School District, North Marin Water District, Novato Sanitary District, Indian Valley College, and Marin County Flood Control properties, but do not include open space parcels. Public uses occur on 2,912 acres or 18 percent of the area.

Open Space - Open space lands have been identified because they serve an important purpose for the community which is not economic. A significant amount of this land is in the public domain and has been acquired by various public agencies for natural habitat protection and recreational or aesthetic value. These lands benefit all residents and have been secured for public enjoyment and the preservation of the community's ecological assets. Open Space land accounts for 3,926 acres or about 25 percent of all land within the City.

Private Tax Exempt - The acreage for private tax exempt land use reflects parcels owned by churches and other tax exempt or non-profit organizations. These lands total 261 acres or 1.6 percent of the land.

Vacant Land (Developable/Undevelopable) - Land in this category includes undeveloped land that may or may not have development potential. It accounts for 1,909 acres or 12 percent of the land within the City Limits or 2,773 acres and 12 percent of the total land within the City and the SOI.

Sphere of Influence

Forty percent (2,747 acres) of the land outside the City Limits but within the SOI is in agricultural uses. Single-family residential uses occur on 1,781 acres or 25 percent of the land. Open space accounts for 15 percent (1,003 acres), and vacant lands comprise 864 acres or 13 percent.

Existing General Plan

The area that Novato uses for defining land uses covers all territory within the boundaries of the City of Novato as well as land outside its boundaries that has been determined in LAFCO's judgment to bear a relation to the City's planning efforts (i.e., SOI). The total acreage within the City and SOI is about 23,000 acres or 36 square miles of which 25 square miles are within the current City Limits and the remaining 11 square miles are within the SOI.

The current Novato General Plan emphasizes a low density residential community with more intensive activity centers located in Downtown at Ignacio and along Highway 101. The intent of the low density residential classification is to encourage an overall low density atmosphere through open space preservation and appropriate zoning controls. Table 31 presents existing land use statistics sorted by the 1981 General Plan land use designations (please note that the total acreage shown in Table 31 is 22,783 acres whereas on Table 4 earlier in the EIR the total was 22,534; this 249 acre difference, or 1 percent difference, is due to the fact that traffic area zone maps were used in devising one table and another City land use data base for the other; the difference is so slight that it does not affect the analyses or conclusions in this EIR).

Marin Countywide Plan

The Marin Countywide Plan designates land within the unincorporated Novato Planning Area as primarily agriculture to preserve and protect agricultural land uses. The unincorporated Planning Area also contains a large amount of low density rural residential uses. Additional uses include limited amounts of commercial, industrial and open space lands. The Marin Countywide Plan land use categories utilized in the unincorporated parts of the Novato Planning Area are compared with the City's designations in the *Existing Conditions Report* (Table 9.1).

Section 2.3 of this EIR describes the main differences in land use designations between the Countywide Plan and the Draft City General Plan.

Special Land Uses Plans

Novato Redevelopment Project

The Novato Redevelopment Project was developed to (a) eliminate blight including an inadequate and obsolete infrastructure, conflicting incompatible and inappropriate land use

Table 31

**Existing Land Use Summary by General Plan Designation
(Existing General Plan)**

TABLE 9.4											
EXISTING LAND USE SUMMARY BY GENERAL PLAN DESIGNATION											
LAND USE DESIGNATION	GPLAN	CITY LIMITS TOTALS									
		ACREAGE		DWELLING UNITS			BUSINESS SQ FT				
		TOTAL ACR	NO POTENTIAL	UNITS	ADDN'L*	BLDOUT	OFFICE	COMMERCIAL	INDUSTRIAL	ADDITIONAL*	BUILT DOUT
SF Res	RR	198.14	0.00	1	85	86	0	30,792	0	-30,792	0
	R01	1,273.77	863.54	176	210	386	0	840	0	0	840
	R1	7,118.93	2,378.63	11,680	2,321	14,001	0	150,414	12,110	51,619	214,143
SF Res Total		8,590.84	3,242.17	11,857	2,616	14,473	0	182,046	12,110	20,827	214,983
MF Res	R5	264.67	89.19	1,472	418	1,890	0	11,663	0	118,763	130,426
	R10	462.06	168.41	3,508	724	4,232	800	99,745	0	9,070	109,615
	R20	233.33	141.05	619	727	1,346	0	64,405	0	119,005	183,410
MF Res Total		960.06	398.65	5,599	1,869	7,468	800	175,813	0	246,838	423,451
Res Total		9,550.90	3,640.82	17,456	4,485	21,941	800	357,859	12,110	267,665	638,434
Office Total	OB,OI,OP,OR	205.27	30.32	184	174	358	991,524	374,312	0	824,339	2,190,175
Comm. Total	CG,CR,CS,CSP	435.96	147.08	259	-38	221	110,992	2,228,940	0	1,021,945	3,361,877
Ind. Total	IG,IP	438.94	159.29	230	-214	16	59,760	2,776,874	123,439	2,216,396	5,176,469
Business Total		1,080.17	336.69	673	-78	595	1,162,276	5,380,126	123,439	4,062,680	10,728,521
Government	CON	2,177.41	2,058.90	3	0	3	0	0	0	0	0
	PUB	1,344.17	1,322.33	7	1	8	0	13,086	0	111,949	125,035
Gov't Total		3,521.58	3,381.23	10	1	11	0	13,086	0	111,949	125,035
Hamilton	HAM	1,723.28	337.55	950	920	1,870	0	0	0	1,228,371	1,228,371
Gross Field	ALU	0.00	0.00	0	0	0	0	0	0	0	0
Non-Res. Total		6,325.03	4,055.47	1,833	843	2,476	1,162,276	5,393,212	123,439	5,403,000	12,081,927
Res+Non-Res Total		15,875.93	7,696.29	19,089	5,328	24,417	1,163,076	5,751,071	135,549	5,670,665	12,720,361
RR: Up to 0.49 du/ac R01: .1 to 1 du/ac R1: 1 to 5 du/ac R5: 5 to 10 du/ac R10: 10 to 20 du/ac R20: 20 to 30 du/ac	<p>* Negative net values in "additional" category reflect sites where existing dev't > potential (buildout)</p> <p>Source: City of Novato, <i>Existing Conditions Report</i>, April 1995</p>										

**Existing Land Use Summary by General Plan Designation
(Existing General Plan)**

TABLE 9.4

EXISTING LAND USE SUMMARY BY GENERAL PLAN DESIGNATION

SPHERE OF INFLUENCE TOTALS

LAND USE DESIGNATION	GPLAN	ACREAGE		DWELLING UNITS			BUSINESS SQ FT				
		TOTAL ACR	NO POTENTIAL	UNITS	ADDN'L*	BLDOUT	OFFICE	COMMERCIAL	INDUSTRIAL	ADDITIONAL*	BUILDOUT
SF Res	RR	0.00	0.00	0	0	0	0	0	0	0	0
	R01	3,502.96	922.45	1,246	461	1,707	0	46,195	0	5,154	51,349
	R1	252.50	35.18	719	24	743	0	0	0	0	0
SF Res Total		3,755.46	957.63	1,965	485	2,450	0	46,195	0	5,154	51,349
MF Res	R5	0.00	0.00	0	0	0	0	0	0	0	0
	R10	0.00	0.00	0	0	0	0	0	0	0	0
	R20	0.00	0.00	0	0	0	0	0	0	0	0
MF Res Total		0.00	0.00	0	0	0	0	0	0	0	0
Res Total		3,755.46	957.63	1,965	485	2,450	0	46,195	0	5,154	51,349
Office Total	OB,OI,OP,OR	0.00	0.00	0	0	0	0	0	0	0	0
Comm. Total	CG,CR,CS,CSP	17.45	9.81	1	0	1	0	48,552	0	0	48,552
Ind. Total	IG,IP	312.35	27.46	0	136	136	0	255,826	0	1,944,975	2,200,801
Business Total		329.80	37.27	1	136	137	0	304,378	0	1,944,975	2,249,353
Government	CON	2,757.41	1,693.90	1	186	187	0	0	0	0	0
	PUB	0.00	0.00	0	0	0	0	0	0	0	0
Gov't Total		2,757.41	1,693.90	1	186	187	0	0	0	0	0
Hamilton	HAM	0.00	0.00	0	0	0	0	0	0	0	0
Gross Field	ALU	64.66	64.66	0	0	0	0	0	0	0	0
Non-Res. Total		3,151.87	1,795.83	2	322	324	0	304,378	0	1,944,975	2,249,353
Res+Non-Res Total		6,907.33	2,753.46	1,967	807	2,774	0	350,573	0	1,950,129	2,300,702
RR: Up to 0.49 du/ac R01: .1 to 1 du/ac R1: 1 to 5 du/ac R5: 5 to 10 du/ac R10: 10 to 20 du/ac R20: 20 to 30 du/ac	<p>* Negative net values in "additional" category reflect sites where existing dev't > potential (buildout)</p> <p>Source: City of Novato, <i>Existing Conditions Report</i>, April 1995</p>										

Table 31 (continued)

**Existing Land Use Summary by General Plan Designation
(Existing General Plan)**

TABLE 9.4											
EXISTING LAND USE SUMMARY BY GENERAL PLAN DESIGNATION											
LAND USE DESIGNATION	GPLAN	CITY + SPHERE OF INFLUENCE TOTALS									
		ACREAGE		DWELLING UNITS			BUSINESS SQ FT				
		TOTAL ACR	NO POTENTIAL	UNITS	ADDN'L*	BLDOUT	OFFICE	COMMERCIAL	INDUSTRIAL	ADDITIONAL*	BUILDOUT
SF Res	RR	198.14	0.00	1	85	86	0	30,792	0	-30,792	0
	R01	4,776.73	1,785.99	1,422	671	2,093	0	47,035	0	5,154	52,189
	R1	7,371.43	2,413.81	12,399	2,345	14,744	0	150,414	12,110	51,619	214,143
SF Res Total		12,346.30	4,199.80	13,822	3,101	16,923	0	228,241	12,110	25,981	266,332
MF Res	R5	264.67	89.19	1,472	418	1,890	0	11,663	0	14,895	26,558
	R10	462.06	168.41	3,508	724	4,232	800	99,745	0	9,070	109,615
	R20	233.33	141.05	619	727	1,346	0	64,405	0	119,005	183,410
MF Res Total		960.06	398.65	5,599	1,869	7,468	800	175,813	0	142,970	319,583
Res Total		13,306.36	4,598.45	19,421	4,970	24,391	800	404,054	12,110	168,951	585,915
Office Total	OB,OI,OP,OR	205.27	30.32	184	174	358	1,006,524	374,312	0	824,339	2,190,175
Comm. Total	CG,CR,CS,CSP	453.41	156.89	260	-38	222	110,992	2,279,492	0	1,021,945	3,410,429
Ind. Total	IG,IP	751.29	186.75	230	-78	152	59,760	3,132,736	123,439	4,161,371	7,337,446
Business Total		1,409.97	373.96	674	58	732	1,177,276	5,786,540	123,439	6,007,655	12,938,050
Government	CON	4,934.82	3,752.80	4	186	190	0	0	0	0	0
	PUB	1,344.17	1,322.33	7	1	8	0	13,086	0	111,949	125,035
Gov't Total		6,278.99	5,075.13	11	187	198	0	13,086	0	111,949	125,035
Hamilton	HAM	1,723.28	337.55	950	920	1,870	0	0	0	1,228,371	1,228,371
Gross Field	ALU	64.66	64.66	0	0	0	0	0	0	0	0
Non-Res. Total		9,476.90	5,851.30	1,635	1,165	2,800	1,177,276	5,799,626	123,439	7,347,975	14,291,456
Res+Non-Res Total		22,783.26	10,449.75	21,056	6,135	27,191	1,178,076	6,203,680	135,549	7,360,066	14,877,371
RR: Up to 0.49 du/ac R01: .1 to 1 du/ac R1: 1 to 5 du/ac R5: 5 to 10 du/ac R10: 10 to 20 du/ac R20: 20 to 30 du/ac	<p>* Negative net values in "additional" category reflect sites where existing dev't > potential (buildout)</p> <p>Source: City of Novato, <i>Existing Conditions Report</i>, April 1995</p>										

and small and irregular lots; (b) to assemble the land into parcels suitable for development; (c) to re-plan and redesign undeveloped areas which are currently underutilized; (d) to strengthen retail functions and economic base of the Project Area by developing a regional shopping center; (e) to increase employment opportunities and the supply of low and moderate income housing; and (f) to provide certain public improvements.

The project area includes approximately 400 acres within the Novato City Limits. The project area includes land east of U.S. Highway 101, north of State Route 37, and south and west of Novato Creek. Two interchanges are also located within the area - Redwood Boulevard/Rowland Avenue and the Highway 101/37 interchange. The redevelopment project allows general industrial, business, general commercial industrial park, and conservation uses in the area.

The Redevelopment Plan does not present a Specific Plan or establish specific projects for the area. The Plan presents a framework within which Specific Plans will be presented and specific projects will be established. A complete description of the area and history of development is included in Chapter 9 of the *Existing Conditions Report*.

Gnoss Field Airport Land Use Plan

Gnoss Field is located in the northeast portion of the Novato Planning Area and is 91.4 acres in size. The facility is categorized as a basic utility airport under the Federal Aviation Administration standards. A basic utility airport handles 75 to 90 percent small general aviation aircraft (12,500 pounds maximum). In 1986 there were 253 single-engine aircraft, 28 twins, and 2 helicopters based at the airport for a total of 283 aircraft. The total number of aircraft decreased to 230 as of June, 1990. Aviation forecasts indicate that the number of aircraft based at Gnoss Field will eventually grow to about 500 over the next 20 years.

State law requires that a County with a public airport establish an Airport Land Use Commission. Duties of the Commission include the preparation and adoption of an Airport Land Use Plan (ALUP) to ensure compatible land uses in the vicinity of airports. The issues addressed in the ALUP include: (1) airspace/height restrictions, (2) aviation safety, (3) noise compatibility, and (4) land use compatibility.

The Airport Master Plan adopted by Marin County in 1990 provides guidelines for development of the airport over the next 20 years. The Master Plan calls for construction of improved facilities in three stages.

The ALUP determined that there were no natural features or man-made objects within the approach and clear zones that would present any significant airspace operational problems. Unincorporated land to the north and east of the airport is designated Agricultural and Conservation in the Countywide General Plan. It is expected that there will be little or no problem with airport compatibility because of the low level of development allowed in these areas.

Specific Plan for Downtown Novato

In July, 1993, the City initiated a Specific Plan process for downtown Novato. The *Existing Conditions Report* (Chapter 9) describes the history and public involvement phases of this planning effort. To date, a background report has been prepared. Eventually the Plan will include information on streetscape design, special improvement areas, traffic circulation, parking, infrastructure, financing, development standards, and business organization.

Current Land Use Proposals

The City is processing or recently processed a number of planning applications for development. The most significant projects are listed below.

Projects Within the City Limits

Vintage Oaks Shopping Center

Vintage Oaks regional shopping center, located at the Rowland Boulevard interchange with U.S. 101 was approved in 1990 and is substantially complete. It has about 630,000 square feet of floor area and about 75 stores or services, anchored by Costco, Target, and Macy's Home Store. The City projects the completed center will provide over 1,450 jobs and generate sales tax revenue of about \$1.5 million to \$2.5 million annually over the next 20 years.

Hamilton Field

Hamilton Air Force Base was closed in the middle 1970s as an active Air Force facility. In 1979, approximately 450 of the 1,600 acres were declared surplus. In 1984, the surplus acreage was auctioned to a private developer, Berg-Revoir. Berg-Revoir was unable to obtain City approval of their plans and their rights were passed to another private developer, New Hamilton Partners (NHP).

NHP obtained City approval in 1993 for a project with 845 residential units (subsequently increased to 920), up to 825,000 square feet of office and retail use, and approximately 200 acres of parks and open space. Development is expected to start in 1995.

Hamilton Reuse Plan

The remaining 1,200 acres at Hamilton were declared surplus in 1992 and 1993, but remain in federal ownership. The City, in cooperation with Marin County, has approved a reuse plan for these lands, the major components of which are the runway and surrounding lowlands and military housing (about 1,500 units). Future development applications on this site will be subject to the policies and programs of the new City General Plan.

Fireman's Fund, Phases 2 and 3

This Precise Development Plan for 455,000 square feet of office space to complete the buildout of the Fireman's Fund project was approved in 1991 and is nearing completion. The total employees, including those in the existing buildings, would be a maximum of 3,500 on the 67-acre site.

Bahia

This is a Master Plan amendment proposing 424 dwelling units and would complete buildout of the Bahia community. A Final EIR was approved by the City in 1994. This project will be subject to the policies and programs of the new City General Plan.

Black Point Golf Links

This was a General Plan Amendment, Rezoning and Master Plan on the former site of the Renaissance Pleasure Faire. The total site contains 254 acres and was proposed for 53 single-family homes and an 18-hole golf course. The City Council denied the project in December, 1994 and then approved it in October, 1995. However, as of this writing the courts have found that the EIR prepared for the project was not legally adequate and must be amended prior to any approval of the project.

Indian Valley Campus Lighted Playing Fields

This is a City project involving an agreement with the Marin Community College District to locate sports fields and lighting on an eight-acre site in the western part of the IVC campus. The City initially prepared a negative declaration for this project. An interested citizen filed suit to require an EIR and a Marin Superior Court judge mandated preparation of an EIR. Completion of a Final EIR and a project decision is expected in 1995. This project was approved in October, 1995.

Projects Within City's Sphere of Influence

Buck Center on Research and Aging

This involves a laboratory research facility of 335,000 square feet and approximately 130 units of on-site housing, located adjacent to the northern City limits and the Partridge Knolls neighborhood west of Highway 101. As of this writing, the project was rejected by County voters, but City of Novato voters approved a separate resolution recommending that the City Council proceed with annexation and rezoning of the site to allow the project. This project will be subject to the policies and programs of the new City General Plan.

Rush Creek Ranch

This project involves the property also known as Atherton Ridge or Atherton Meadows, 393 acres on the north side of Atherton Avenue, east of Highway 101. The County has approved an 87-single-family home project; annexation to the City is not anticipated.

Projects Outside the City's Sphere of Influence

Bel Marin Keys Unit Five

This project involves all the lands (1,610 acres) to the south of the existing Bel Marin Keys neighborhood. A project of 1,190 dwellings, neighborhood shopping facilities, an 18-hole golf course, and a marina was denied by the County in 1994. A new application for 792 single-family residences is currently incomplete, and the County has given the applicant until the end of November, 1995 to provide additional information.

Redwood Sanitary Landfill

This project involves substantial upgrading and expansion of the Redwood Sanitary Landfill to extend its useful life and comply with state and federal regulations. The County has certified an EIR and project approval is expected in 1995.

B. Potential Impacts and Mitigations

Criteria Used to Determine Significance

A project will have an adverse impact if it:

1. Alters basic development patterns and changes the fundamental character of the area or results in conflicts between different types of land use.
2. Substantially increases growth rates.
3. Coverts prime agricultural lands to non-agricultural uses.
4. Results in loss of designated open space.

Impact 4.17-A New development may convert agricultural land to non-agricultural uses.

Future development on lands used for agricultural purposes would potentially eliminate those uses. This would be a significant impact. However, a comparison of the Land Use Designations Map of the Draft General Plan with the maps showing important agricultural soils and properties under Williamson Act contracts (Figure 5.2 in the *Existing Conditions Report*) shows that almost all important agricultural areas have a designation of Conservation or Open Space which allows very little future development. The one major exception is an area west of Highway 101 and north of San Marin Drive which is designated "Farmland of Local Importance" on Figure 5.1 in the *Existing Conditions Report*; commercial development of this property is allowed in the Draft General Plan. However, a review of the *Soil Survey* shows that the important agricultural soils on this site are mainly limited to the area that has already been developed with the Fireman's Fund center. As such, this loss of locally important farmland has already occurred.

Mitigation Measures Proposed by the Draft General Plan

The Draft General Plan Land Use Designations Map allows very little development potential for identified agricultural resource properties. In addition, the Environment Chapter includes specific policies and programs directed towards protecting agricultural resources. These policies and programs are listed below.

EN Objective 5 Protect continued agricultural use of agricultural lands.

EN Policy 20 Preserve Agricultural Lands. Protect lands designated for agriculture.

EN Program 20.1: Coordinate with the County of Marin to maintain policies to protect agricultural land.

EN Program 20.2: Revise development regulations as required to preserve agricultural and maricultural activities on lands designated for agricultural use, by retaining or establishing very low density zoning categories; by specifying appropriate land uses in agricultural and maricultural areas; and by requiring clustering of development for maximum protection of lands. (Refer to Land Use Chapter.)

EN Program 20.3 Assist public agencies or a non-profit land trust in the acquisition of conservation easements on agricultural lands in the Novato Planning Area.

EN Policy 21 Environmental Impacts of Agriculture. Encourage agricultural activities that minimize adverse effects on environmental resources.

EN Policy 22 Mariculture. Consider maricultural use, the cultivation of marine organisms in their natural environment, of tidelands and on-shore production areas where possible along the shore of the Bay.

Environment Policy 15 also encourages the continuation of agricultural uses in the Bayfront Overlay Zone.

Additional Mitigation Measures Suggested

The Land Use Designations Map and the policies and programs listed above will adequately protect agricultural resources in Novato. There will be no cumulative significant impact. No additional mitigation measures are required.

Impact 4.17-B Development of vacant lands may convert lands that are potential public open space.

The *Marin Countywide Plan* identifies six Open Space Areas in or near Novato. These areas are assessed below.

1. Big Rock Ridge. The target size of this open space is 6,400 acres of which 4,512 have been secured. The Draft General Plan designates lands within this area as Open Space or Conservation (60 acre minimum).
2. St. Vincent's. The target size for this open space is 1,070 acres of which 263 acres have been secured. The Draft General Plan designates this area as Conservation (60 acre minimum).
3. Pinheiro Ridge. The target size for this open space is 970 acres of which 109 acres have been secured. The Draft General Plan designates this area as Open Space, Conservation (60 acre minimum) or Very Low Density Residential. The area designated residential is also designated for residential use in the Countywide General Plan.
4. Mount Burdell. The target size for this open space is 1,400 acres of which 1,453 acres have been secured. The Draft General Plan designates this area as Open Space.
5. Novato Creek/Black Point. The target size for this open space is 790 acres of which 1,808 acres have been secured. The Draft General Plan designates this area as Open Space.
6. Petaluma River. The target size for this open space is 950 acres of which 196 acres have been secured. The Draft General Plan designates this area as Open Space or Conservation (60 acre or 10 acre minimum).

Figure 22 shows existing open space areas in Novato. This map includes lands owned by public agencies which may not be official open space, but because they will not be developed serve as de facto open space.

Development of lands targeted as open space would be a significant adverse impact.

Mitigation Measures Proposed by the Draft General Plan

The Land Use Chapter designates lands within target County open space areas (where development has not already been approved) for Conservation or Open Space. This substantially limits the development potential of these lands. Given the low level of development possible on these lands, they may remain available for public purchase in the future.

The Environment Chapter contains specific policies and programs aimed at protecting open space and ensuring adequate long-term maintenance. These policies and programs include:

EN Objective 13: Preserve open space for the protection of natural resources.

EN Policy 41 Open Space of Countywide Importance. Protect open space of countywide significance in the Novato Area.

EN Program 41.1: Continue to work with the Marin County Open Space District to establish a preservation plan for open space.

EN Program 41.2: Work with state and federal agencies and non-profit organizations to obtain funds for acquisition of significant open space.

EN Policy 42 Specific Use Objectives for Open Space. Protect publicly-owned open space areas in their natural state; limit uses to those with a minimal adverse environmental impact.

EN Program 42.1: Establish standards for the management and maintenance of City-owned open space.

EN Program 42.2: Establish an annual City open space maintenance and environmental needs inventory, and include a budget for open space maintenance.

EN Policy 43 Access to Open Space. Provide public access to open space in a manner compatible with the preservation and enhancement of the natural environment.

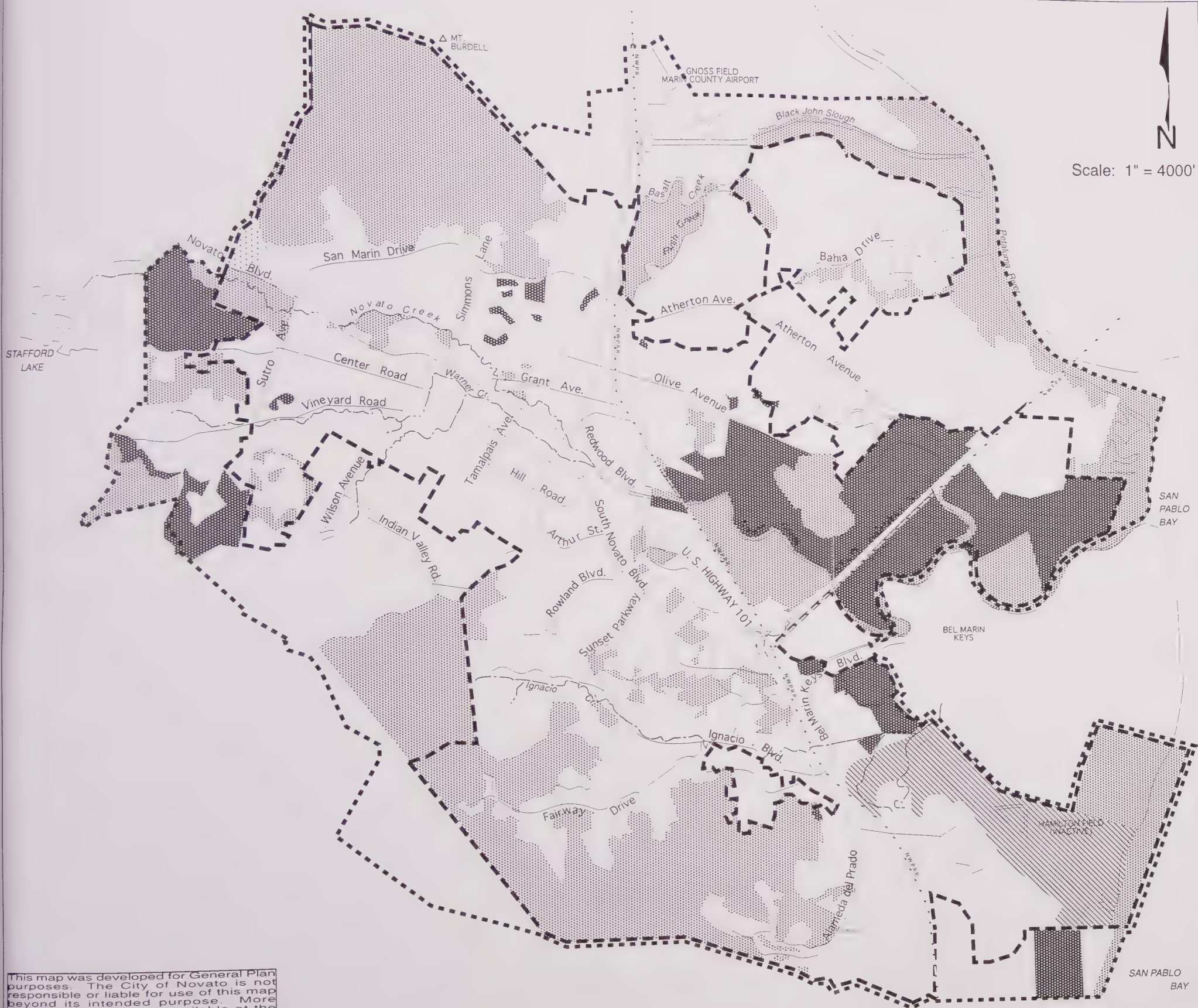
EN Program 43.1: Provide access to public open space through the review of development proposals in adjacent areas.

Additional Mitigation Measures Suggested

These policies and programs ensure coordination with County open space planning and that important open space is not developed. The Land Use Designations Map reduces development potential on designated open space properties, thereby allowing little development and the potential for future public acquisition. The impact is reduced to a level below significance. No additional mitigation measures are required.

FIGURE 22

OPEN SPACE



OWNERSHIPS



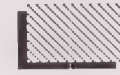
State of California, Marin County Open Space District (MCOSD) and the City of Novato (includes City parks)



Marin County Flood Control District, Las Gallinas Sanitary District, Novato Sanitary District, and Scenic Easements (Private Open Space)



Potential Open Space preserves (currently MCOSD examining the establishment of assessment districts)



Potential Open Space on Hamilton Field

NOTE: The information presented in this map is schematic only. Map does not show all Scenic Easements. It does not include properties less than 5 acres in size. More detailed maps with this information are on file at the Community Development Department

SOURCE: Mapping prepared by MCOSD (1991), and City of Novato Land Use Data Base

City of Novato General Plan Revision
Draft
Environmental Report

----- City Limit Line

..... Sphere Of Influence

Revised & Recirculated
November, 1995

This map was developed for General Plan purposes. The City of Novato is not responsible or liable for use of this map beyond its intended purpose. More detailed information is available at the Novato Community Development Department.

Impact 4.17-C Development of lands near Gness Field airport could put people and improvements at risk.

Gness Field potentially affects land use in Novato in the form of noise and safety impacts. It is located in the northeast portion of the Novato Planning Area. The County owns and operates this general aviation airport and has completed a Master Plan in 1989 that reflects the anticipated growth in general aviation activity for the next 20 years. The Master Plan addresses the future development of the airport and aviation operations. The Aviation Commission is responsible for airport operations.

The Airport Land Use Plan (adopted in 1991) addresses land use issues in the environs of the airport. Development proposals in the airport's environs are referred to the County Airport Land Use Commission (ALUC) for a determination of consistency with the Airport Land Use Plan. In addition, the City's General Plan must be consistent with the policies established by the Master Plan for the referral area. The Draft General Plan Land Use Designations Map does not contain any land uses within the referral area which would be inconsistent with the Airport Land Use Plan. The height limits for new construction permitted by the Zoning Ordinance are well below the maximum permitted.

A review of the Draft General Plan Land Use Designations Map shows very little development potential near Gness Field. The area surrounding the airport is designated Conservation 60. Very little new development is possible given this land use designation.

Mitigation Measures Proposed by the Draft General Plan

In addition to the land use designations provided for sites surrounding the airport, the Safety and Noise Chapter of the Draft General Plan contains the following policies and programs to reduce potential airport-related impacts:

SF Objective 10 Reduce aviation hazards.

SF Policy 34 Minimize Hazards of the Gness Field Airport: Minimize risk to lives and property due to hazards associated with the operation of Gness Field Airport.

SF Program 34.1: Consider the recommendations of the ALUC regarding development or conservation proposals which would create any air navigation hazards in the Gness Field Airport Land Use Commission (ALUC) Referral Area.

SF Program 34.2: Refer all General Plan Amendments, Zoning Ordinance Amendments, and specific plans within the Gness Field Airport Referral Area to the ALUC.

SF Policy 35 Monitor County Airport Planning: Continue to monitor the County's planning efforts for Gness Field Airport to ensure that the health and safety of Novato residents are protected.

SF Program 35.1: Request that Marin County inform the City of proposed plans and changes in operations for Gness Field Airport.

SF Program 35.2: Request that the Marin County Aviation Commission adopt standards for non-fixed wing aircraft (balloons, helicopters, and ultralights) flyover altitudes and locations in the Novato Planning Area.

SF Program 35.3: Request the County delete aviation uses at Hamilton Field in all their applicable planning documents.

Additional Mitigation Measures Suggested

These policies and programs adequately mitigate the impact to a level that is less than significant, and no additional mitigation measures are required.

Impact 4.17-D Adoption and implementation of the Downtown Specific Plan could alter the character of the area.

The goal of the Downtown Specific Plan is to revitalize the Downtown. It is being developed with extensive public involvement. Historically, Downtown Novato was the center of a thriving small community. It had a railway station, theaters, bars, and many stores. After Highway 101 was constructed around Novato, the visibility and importance of the Downtown decreased significantly. The suburban, low-density residential development built during the 1960s and 1970s, combined with the establishment of large shopping centers readily accessible from the freeway in San Rafael and other nearby communities further reduced the commercial vitality of the Downtown. Most recently, the Vintage Oaks Shopping Center added retail space equivalent to the entire Downtown.

Community sentiment has changed. There now is a desire for the sense of place created by the traditional, small-town main street, providing a safe, pedestrian-friendly atmosphere where people can gather, shop and be entertained.

The *Downtown Specific Plan* is intended to implement this vision by building upon the unique assets that exist: the large number of historic and attractive older buildings; the proximity to the railway and Highway 101; the diverse building supply and related light industrial businesses located north of Grant Avenue; the community building and City Hall Campus; and the hillside views surrounding Downtown.

Mitigation Measures Proposed by the Draft General Plan

The Draft General Plan recognizes that this Specific Plan is being prepared. The Specific Plan is required to be consistent with the goals, policies, and programs of the General Plan. The goals of the Specific Plan are to improve the character of the area, and this would be a beneficial impact. As such, no mitigations are required. Site-specific impacts of possible projects must be reviewed at the time the Specific Plan is adopted and/or development applications are filed. The Community Identity Chapter of the Draft General Plan contains a number of policies and programs related to the Downtown Specific Plan. These include:

CI Objective 7 Establish the Downtown as the primary center for community and cultural activities.

CI Objective 8 Establish the Downtown as a commercial and business center for the community.

CI Objective 9 Provide a variety of housing Downtown.

CI Objective 10 Improve the appearance and attractiveness of the Downtown.

CI Policy 14 Downtown Specific Plan. Adopt and maintain a Downtown Specific Plan.

CI Program 14.1 Develop an education/information program for the Downtown Specific Plan.

CI Program 14.2: Coordinate development Downtown with the updated Downtown Specific Plan. Refer to CI Map 1: Downtown Specific Plan.

CI Policy 15 Building Height. Consider amendments to the building height regulations in the Zoning Ordinance to allow additional height for well-designed structures Downtown that do not obstruct scenic views.

CI Policy 16 Maintain Diversity. Maintain and support the diversity of businesses and services Downtown.

CI Program 16.1: Consider establishing a Business Improvement District (BID) specifically for the area within the Downtown Specific Plan area.

CI Policy 17 Encourage Tourism. Refer to the Economics/Fiscal Chapter.

CI Policy 18 Farmers' Market. Continue to support the Farmers Market.

CI Program 18.1: Provide a space for a Farmers Market Downtown.

CI Policy 19 City Hall. Maintain the City Hall campus and appropriate community facilities Downtown.

CI Program 19.1: Identify possible Downtown locations for additional community facilities.

CI Policy 20 Ground Floor Retail. Encourage the establishment of ground floor retail uses wherever feasible.

CI Policy 21 Town Square/Plaza. Consider the establishment of a "Town Square/Plaza" Downtown.

CI Policy 22 Automobile-Intensive Uses. Encourage the location of new automobile-intensive uses such as gas stations, fast foods and mini-marts outside the Downtown.

CI Policy 23 Additional Parking. Facilitate the provision of adequate parking, emphasizing a combination of public and private parking facilities.

CI Program 23.1: Encourage shared parking agreements wherever feasible. Utilize, as appropriate, development agreements, conditions of approval, and other means to encourage shared parking arrangements.

CI Program 23.2 Consider revising parking requirements for mixed use developments in the Zoning Ordinance to account for alternate use times.

CI Policy 24 Architectural and Landscape Design. Require attractive architectural and landscape design for all new developments as well as for expansion to existing uses, consistent with Downtown Specific Plan guidelines.

CI Policy 25 Pedestrian Movement. Encourage a pedestrian-oriented Downtown.

CI Policy 26 Public/Private Partnerships. Encourage cooperation and collaboration between the City and Downtown property and business owners to implement the Downtown Specific Plan.

CI Program 26.1: Consider implementing a Main Street program.

CI Program 26.2: Consider various funding vehicles to encourage existing businesses to renovate and stay Downtown.

CI Policy 27 Additional Housing. Accommodate additional housing on upper floors over commercial and office uses where appropriate.

The Land Use Chapter establishes a Mixed Use designation for the Downtown which permits residential development.

CI Policy 28 Preserve Residential Neighborhoods Adjacent to Downtown.

Several residential neighborhoods, such as the North West Quadrant Area, are located adjacent to Downtown. Policies and programs will be considered to preserve and enhance these neighborhoods and ensure that they will not be adversely affected by future development Downtown.

Similar policies and programs are included under EC Objective 5 "Revitalize the Downtown Area" in the Economic Development and Fiscal Vitality Chapter.

Additional Mitigation Measures Suggested

The Draft General Plan will not have adverse impacts as regards the future Specific Plan. No additional mitigations are warranted.

Impact 4.17-E Adoption of the Draft General Plan includes an extension of the City's Sphere of Influence.

The Draft General Plan includes a proposed extension of the City's Sphere of Influence to include the following properties.

1. The City intends to add a portion of the St. Vincent's property (Site 34 on Figure 3) located in the southeast corner of the City to its Sphere of Influence. The rationale for including this area within the SOI is that this property is a logical southern boundary for the City (as shown on Figure 2). In the Countywide Plan, this area is a small piece of land located between the recognized SOI of the City of Novato and the recognized SOI of the City of San Rafael. The Countywide Plan designates the

western third of the area as Urban and Conservation Reserve (1 unit per 100 acres), the middle third as Public Facility/Urban and Conservation Reserve, and the eastern third as Tidelands (subject to State Lands Commission jurisdiction). The City is proposing the area be designated Conservation.

2. Addition of the property where the County has approved development of the Buck Center for Aging (Site 40 on Figure 3). Annexation of this property to the City was required as part of County approval of this project. As of this writing, this project is subject to a County-wide vote as well as a City-wide vote.

Addition of these properties to the City's SOI will not have a significant effect. The Draft General Plan does not allow development beyond that currently allowed by the Marin Countywide Plan.

Mitigation Measures Proposed by the Draft General Plan

The Draft General Plan recommends extension of the SOI. Future development of these sites will be subject to all policies and programs in the Draft Plan. There is no significant impact. The City must apply for an amendment to its SOI. LAFCO must determine whether to approve this change.

Additional Mitigation Measures Suggested

No additional mitigations are required.

Impact 4.17-F The General Plan includes land use designations for the Sphere of Influence which are different from the designations provided in the Marin Countywide Plan. The Draft General Plan could induce additional development within the Sphere of Influence.

Policies 10-13 of the Land Use Chapter of the Draft General Plan regulate annexations to the City to ensure that adequate public services are available. Annexation of properties outside the existing City Limits must meet existing annexation guidelines.

The Draft General Plan basically includes similar land use designations for incorporated properties in the SOI as occur in the *Marin Countywide Plan*. The main differences in land use designation are summarized in Section 2.3 of this EIR.

The development potential of the SOI under the *Marin Countywide Plan* includes about 650 dwelling units and 870,154 square feet of non-residential development as compared to 563 dwelling units and 400,000 square feet for buildout under the Draft General Plan. This includes Major Development Sites 22, 33, 34, 38, and 40 as shown on Figure 3 as well as other, smaller vacant parcels. Note that buildout for the SOI under the *Marin Countywide Plan* as shown on Table CD-2 of that report has been reduced here by 824 dwelling units to account for the fact that the Countywide Plan includes a larger Planning Area than the City Limits and the SOI (the Planning Area for the Draft Plan); the major difference is the 805 units that would be possible at Bel Marin Keys. Adjusting for this fact, there is still less development potential under the Draft General Plan. Thus, adoption of the Draft

General Plan could have a beneficial effect if these properties annex to the City and develop per the Draft General Plan land use designations.

It is noted that the Draft Plan includes a reduction of the Novato Planning Area. As this area is generally a referral area wherein the City has no jurisdiction over land uses, this change will not have any significant adverse effects.

Mitigation Measures Proposed by the Draft General Plan

The Draft General Plan contains land use designations for properties in the SOI. The development potential allowed under the Draft General Plan is less than could occur under the *Marin Countywide Plan*. In addition, the policies and programs of the Draft General Plan related to resource protection are as strong or stronger than those included in the Countywide Plan. There is no significant impact. The Land Use Chapter contains specific policies and programs related to the SOI and annexation. These policies and programs are reproduced below.

LU Objective 4 Establish clear limits to urban development outside the Novato City Limits.

LU Policy 10 Boundaries of Sphere of Influence. Retain the 1995 Sphere of Influence boundaries, except for the addition of the proposed Buck Center for Research on Aging and the portion of the St. Vincent's/Las Gallinas Valley Sanitary District property adjacent to Hamilton Army Air Base.

LU Program 3.1: Request that the Marin County Local Agency Formation Commission (LAFCo) revise the Novato Sphere of Influence in accordance with the Novato General Plan.

LU Policy 11 Annexations to Sanitary District. Consider, on a case-by-case basis, supporting connection of existing structures outside the City limits to the Novato Sanitary District, if the City determines it necessary for public health and safety. No additional structures will be connected to sewers unless they annex to the City or the dual annexation policy of LAFCo is waived by the City. (The dual annexation policy of LAFCo states that an unincorporated area should not annex to a special service district unless it also annexes to a city.)

LU Program 11.1: Request that the Marin County Local Agency Formation Commission refer proposals for inclusion in the area served by the Novato Sanitary District to the City for review and comment, and act favorably on the City's recommendations.

LU Policy 12 Referrals. Request that all projects and programs in the unincorporated portions of the Novato Planning Area be referred to the City for review and comment.

LU Policy 13 Annexation Guidelines. Require annexations to meet all of the following guidelines:

- a) Areas to be annexed must be able to be served by existing City facilities and by facilities provided by other agencies, or by environmentally and economically feasible extensions to these facilities. Findings to support annexations must be made to indicate that improvements to support the new development are available. These include transportation, water supply, fire, waste water treatment, schools, and other public services and facilities.*

- b) *Proposed annexations must be contiguous to existing developed areas. Annexation and development that "leapfrogs" over vacant and undeveloped land will not be allowed.*
- c) *Annexation of an area should not have either short-term or long-term negative impacts on the City's fiscal condition. The fiscal effects of the annexation for at least a five year period must be documented at the applicant's expense.*
- d) *For proposed developments seeking annexation a specific development plan, including maps and text, must be prepared for the proposed annexation, showing how the proposed development contributes to the attainment of General Plan goals and policies.*
- e) *Proposed development must be consistent with the proper land use designation and meet all other requirements of the General Plan.*

Additional Mitigation Measures Suggested

There is no significant impact. The County should consider adopting land use policies consistent with the Draft Plan as stated in Draft Plan Land Use Chapter Program 12.2.

Impact 4.17-G Allowing residential development in areas currently used for commercial uses could alter the character of surrounding neighborhoods.

Several responses to the NOP (see Appendix A) state a concern about the effects of allowing relatively dense residential development in existing shopping centers. The Draft General Plan contains these policies to allow the City to meet regional affordable housing requirements. In much of urban California, and particularly Marin County, it is extremely difficult to construct affordable housing. Relatively dense housing is required in order to provide affordable rents or purchase prices.

Constructing multi-family units at existing commercial centers will alter the character of the shopping areas. Depending on the design, such a change is often perceived as beneficial. Residential development can provide more interesting architectural elements to shopping centers. Residents can bring "life" to areas that are often "dead" zones once stores close.

However, dense development could alter the character of the surrounding neighborhood in areas where single-family residential development borders shopping centers. The precise effects cannot be judged without a site plan and detailed assessment of the site and the surrounding neighborhood. These effects will be assessed during CEQA review and Design Review of each proposal. If not properly designed, such housing could adversely affect adjacent neighborhoods. However, it is also possible that with proper design and management, this new residential development could have a beneficial effect on the area character.

Mitigation Measures Proposed by the Draft General Plan

The Housing Chapter purposely allows the potential for residential development in commercial areas. The Community Identity Chapter includes an objective (CI Objective 9) that recommends a variety of housing in the Downtown area. The Community Identity

Chapter includes design guidelines for this new development as well as policies aimed at preserving existing residential neighborhoods adjacent to the Downtown (CI Policy 28). The guidelines established in the Community Identity Chapter provide a framework for ensuring that future development in commercial areas does not significantly affect these commercial areas. Impacts of such mixed use projects on specific neighborhoods will be assessed at the time a development application is filed.

Additional Mitigation Measures Suggested

The cumulative impact is reduced to a level that is less than significant, and no additional mitigations are required. However, it is recommended that the following policy be considered to ensure that neighborhood compatibility issues are clearly identified and assessed when considering new residential development in existing commercial areas.

Policy x Residential Development in Commercial Areas. The environmental review of all development applications that include residential development in existing commercial areas shall include an analysis of the effects of the project on altering the character of the commercial area as well as adjacent residential neighborhoods.

Impact 4.17-H Vacant land will be converted to housing and commercial/industrial development.

Maximum buildout per the Draft General Plan would allow the development of 5,079 additional residential units and 5,342,094 square feet of non-residential development within the City Limits. If all currently incorporated lands within the proposed Sphere of Influence were annexed to the City and developed per the land use designations in the Draft General Plan, an additional 563 residential units and 400,000 square feet of non-residential development could occur in this area. Approximately 40 percent of this buildout could occur on about 4,300 acres of undeveloped land; the remaining 60 percent of the buildout would be infill within areas already developed. When this buildout would occur cannot be predicted. The buildout is a worst case as it assumes maximum development of all parcels within the Sphere of Influence.

Even if all developable parcels are built out, over 50 percent of the total land area within the SOI is designated for agriculture, conservation, parkland, or open space and will remain undeveloped.

Mitigation Measures Proposed by the Draft General Plan

As has been described in previous sections of this EIR, the Draft General Plan contains numerous policies and programs aimed at ensuring that development is restricted on lands with ecological or cultural assets. New development must avoid significantly impacting the environment and be compatible with existing development patterns. These policies and programs have been cited in previous sections relevant to particular impacts. The overall conversion of lands currently vacant and with development potential is an effect that must be accepted if the Draft General Plan is adopted. It is noteworthy that the Draft General Plan reduces the development that would be possible under the existing General Plan.

In general, low elevation lands within the Bayfront Overlay Zone, lands along streams, lands along ridgelines, and other lands with sensitive resources will be left undeveloped.

Agricultural uses and open space will be protected. The overall impact of developing vacant land is not deemed significant given the policies and programs included in the Draft General Plan.

Additional Mitigation Measures Suggested

No additional mitigation measures are required. Individual projects must be assessed on a site-by-site basis

5.0 TOPICAL ISSUES AND IMPACT SUMMARIES

5.0 TOPICAL ISSUES AND IMPACT SUMMARIES

The fifth section of this EIR contains the specific summary section required by CEQA along with a discussion of possible growth-inducing effects of the projects and a discussion of alternatives to the proposed project.

5.1 GROWTH-INDUCING IMPACTS

CEQA requires that an EIR discuss whether a proposed project will induce direct or indirect growth of population, economic development, or housing construction (*CEQA Guidelines*, Section 15126g).

The causes of growth typically involve a complex and varied relationship between a number of factors, including economic conditions and employment opportunities, natural population increase, public policies, and the local environmental setting. Because population and/or economic growth generally produce a varied range of effects that occur simultaneously, attempts to label growth as categorically adverse or beneficial are considered subjective. Furthermore, *CEQA Guidelines* (Section 15126g) state that growth in any area should not be assumed as necessarily beneficial, detrimental, or of little significance to the environment.

The Draft Novato General Plan could be viewed as having no growth-inducing impacts since the growth that could occur under the Draft General Plan is less than the potential growth that could occur under the existing General Plan. From this perspective, the Draft General Plan reduces the growth potential in Novato. Similarly, for unincorporated lands within the Novato Sphere of Influence, the Draft General Plan allows less development than allowed under the *Marin Countywide Plan*. It is noteworthy that the *Marin Countywide Plan Final EIR* concluded that the Countywide Plan did not have any growth-inducing impacts.

From another perspective, the Draft General Plan does designate land for future development, and this development will increase the population, add jobs, and increase the number of housing units relative to existing development patterns. From this perspective, the Draft Plan induces growth.

The process of updating and adopting a comprehensive city-wide General Plan in itself encourages landowners and developers to seek approval of additional development through the review process because of the perception that adoption of a new General Plan will "lock in" authorized development, to the exclusion of all other development options. However, it must again be noted that the Draft General Plan does not, on a city-wide basis, provide for development potential beyond that provided in the existing General Plan; in fact, it would allow less development.

The land use and infrastructure data base was used to estimate levels of growth in the City. These buildout projections, in themselves could be considered growth-inducing. However, it should be noted that these buildout projections show the maximum amount of development that could occur. The total amount of development that will actually occur

will undoubtedly be less than this maximum. The amount of development will be contingent on individual decisions made in the marketplace as well as possible future changes in public policy. Nevertheless, investment decisions will be made based upon the perception that a certain level of development forecast in the General Plan will occur.

Draft General Plan

The following sections discuss the potential growth-inducing impacts of policies or programs included in the individual chapters of the Draft General Plan

Land Use Chapter

The Draft General Plan designates various undeveloped properties for residential or commercial/industrial development. All of these properties are designated for similar, if not more, development in the existing City General Plan or the *Marin Countywide Plan*.

Allowing development of vacant lands will result in new housing and businesses, new jobs, and an increase in the area population. Policies and programs in the General Plan ensure that this development will occur without significantly affecting the environment. The public service infrastructure will be expanded as required to serve this growth. If there are inadequate public services, the City can require density decreases or project delay to ensure that development stays within the City's carrying capacity.

Transportation and Circulation Chapter

Roadway improvements proposed in this Chapter will accommodate projected growth. No new roads through or to major undeveloped areas are proposed except for a new connection between the Bel Marin Keys industrial area and Highway 37. This new connection could have substantial environmental effects, however, it is proposed to relieve existing congestion and would not directly induce growth. This connector would relieve local congestion but not provide additional capacity on Highway 101 or Highway 37. As such, it does not provide room for additional growth.

Housing Chapter

The Draft General Plan will allow the development of a maximum of 5,642 new residential units in the City. New residents of these units will increase the City's population by about 14,105 people (assuming 2.5 people per household). These people will increase demand on public services, parks, and roadways. The General Plan proposes programs that allow service providers and the transportation network to meet the needs of these new residents.

Environment Chapter

This Chapter contains policies and programs aimed at protecting and preserving natural and cultural resources. It will not result in growth.

Safety and Noise Chapter (Safety Portion)

This Chapter contains policies and programs aimed at restraining development in hazardous areas and ensuring that new development is planned to minimize risk to residents and businesses. It will not result in growth.

Safety and Noise Chapter (Noise Portion)

This Chapter contains policies and programs that ensure new residents will not be affected by excessive noise. It will not result in growth.

Economic Development and Fiscal Vitality Chapter

This Chapter describes the economic effects of the Draft General Plan. It describes the predicted revenues and costs of this new development. In itself, this Chapter does not induce growth.

Human Services Chapter

This Chapter details the provision of certain basic services. In itself, it does not induce growth.

Public Facilities and Services Chapter

This Chapter contains policies and programs for providing public services to new development. Extension or construction of water mains, sewer collectors, drainage improvements, schools, and other services will be done at the time that those improvements are required to serve proposed development. It is possible that construction of certain improvements will induce growth on vacant parcels that would be served by the improvements. This would induce growth on those properties.

However, the aim of the Public Facilities Chapter is to provide an overview of what improvements will be required to meet buildout of various areas. Thus, a major sewer collector may be required to serve an area with a number of undeveloped properties. The collector may be constructed once one or more development applications in that area are approved. The size of the collector will likely be larger than required for the project(s) that was approved. Again, this collector will then induce development of other properties in the area it serves. While it would be possible to construct a smaller collector to serve only the projects approved, this would result in future replacement of that collector when other development is approved for the area. Efficiently providing services to meet buildout per the Draft General Plan is the entire point of this Chapter.

Overall, the improvements listed in the Chapter will serve only the buildout allowed in the Draft General Plan. They will not induce additional growth in areas not currently addressed in the Draft Plan.

Community Identity

This Chapter provides design standards to guide future development. It does not induce growth.

Growth-Inducing Impacts Outside the City of Novato

The Draft General Plan contains land use designations for lands outside the City Limits but within the City's Sphere of Influence. These land use designations have been compared to the land use designations provided for these unincorporated lands in the *Marin Countywide Plan*.

The Sphere of Influence contains about 6,905 acres. There are 1,966 existing residential units in this area. Buildout per the Draft General Plan would permit a maximum of 563 additional units. Currently, there are 350,573 square feet of non-residential development within this unincorporated portion of the Sphere of Influence. There is the potential to develop an additional 400,000 square feet given the Draft General Plan land use designations (Westfall, personal communication).

The *Marin Countywide Plan* projects buildout in the unincorporated portions of the Novato Planning Area to include an additional 1,474 residential units and an additional 870,154 square feet of non-residential development. It must be noted that the Novato Planning Area calculations in the County General Plan include a larger area than assessed for buildout in the Draft General Plan. Most of this area is property (to the north and west of the City SOI) designated for very little development (designated agriculture, conservation, or open space). The one significant difference is the inclusion of Bel Marin Keys in the County calculations. If the County projections are reduced by 805 (the maximum number of new residential units allowed on the Bel Marin Keys site given County land use designations), then the County projections for the Novato area would be about 669 additional residential units. For purposes of the EIR analysis, this buildout number is further reduced to 650 units to account for a few additional units possible in the other areas outside the City's SOI that are designated for conservation, agriculture, or open space.

This total of about 650 units is more than the number of units allowed by buildout per the Draft City General Plan (i.e., 563 units). The commercial/industrial development allowed under the Draft City General Plan is also lower than permitted under the Countywide Plan. Thus, the Draft General Plan reduces the growth potential in unincorporated portions of its Sphere of Influence when compared to projections made in the Countywide Plan. The Draft General Plan will not induce additional growth beyond that projected and assessed in the *Marin Countywide Plan* and the EIR prepared for that plan.

The buildout under the Draft General Plan is generally consistent with ABAG growth projections for employment and population growth for the nine-county San Francisco Bay region. ABAG in its "Projections '94" cite that the population within the Novato Sphere of Influence will expand from 53,015 in 1990 to 65,300 people by the year 2010. The 5,642 new residential units that could be constructed under the Draft General Plan within the Novato SOI would generate about 14,387 new people (using the ABAG ratio of 2.55 people per household). ABAG predicts that the number of households will rise from 20,216 in 1990 to 25,330 in 2010 while the Draft General Plan anticipates a maximum buildout of 26,686 units (or households). The number of jobs is predicted to rise from 16,620 in 1990 to 31,620 in 2010. While the buildout under the Draft General Plan is slightly higher than ABAG projections, it must be noted that ABAG projections are for a target date fifteen years in the future while buildout projected for the Draft General Plan are maximum buildout of all property within the SOI. This buildout would be unlikely to all occur by the year 2010. Thus, the impacts associated with adoption of the Draft Plan are not expected to significantly affect the existing growth policies and projections for the other eight counties.

Effects on Sonoma County

Buildout per the Draft Plan will result in increased job opportunities. Many of these new jobs may be filled by residents living in Sonoma County where housing prices are lower. This will tend to induce growth in that county.

The traffic analysis prepared in this report shows that buildout will result in portions of Highway 101 and Highway 37 operating at LOS F. An analysis was conducted by the traffic engineers working on this EIR to determine how much new growth could be allowed in Novato without Highway 101 decreasing to LOS F. It was determined that essentially no new development could occur, and, that in any case, development occurring elsewhere (e.g., Sonoma County) will soon decrease the LOS to LOS F. Congestion of Highway 101 will affect the ability of employees traveling from Sonoma County to get to work. While this is a major effect of the project, traffic congestion will not induce growth in Sonoma County. Increased traffic congestion may counter the tendency for growth in Sonoma County that would occur solely to the increase in employment opportunities.

It is noted that the *Marin Countywide Plan Final EIR* does not address potential growth-inducing impacts on Sonoma County, though those impacts, as regards Novato, are approximately equal to the impacts projected for the Draft General Plan. It is further noted that neither the County of Sonoma nor any of the incorporated cities in that county submitted comments on the Draft EIR for the Countywide Plan.

Conclusions

The Draft General Plan will induce development of properties that are currently undeveloped or underdeveloped. However, this development potential already exists in the existing City and County General Plans. The Draft General Plan reduces the growth potential. The Draft General Plan ensures that growth will occur within the City's "carrying capacity." It recommends adoption of a Growth Management Ordinance to ensure that growth is restricted to the ability of public facilities and roadways (except Highway 101) to serve that development. The growth in housing units, business space, and population is an inevitable product of the Draft General Plan. However, the policies and programs of the Draft General Plan restrict and regulate that growth to avoid significant effects. As such, the preparers of this EIR cannot judge growth in and of itself to be a significant impact per the *CEQA Guidelines* Section 15126(g) which state that growth-inducing effects must be addressed in an EIR but, "It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment." However, the City can certainly conclude, based upon evidence in the record that the growth allowed by the Draft Plan may be beneficial or detrimental. In fact, approval of the Draft General Plan may require the City to adopt overriding considerations that accept some traffic impacts on Highway 101 as acceptable in order to accommodate the selected amount of growth.

5.2 CUMULATIVE IMPACTS

Every EIR must discuss "cumulative impacts" (CEQA 21083[b]), which are defined by the *CEQA Guidelines* to be "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts," *CEQA Guidelines* 15355[a]). Cumulative impacts may be either: a) the cumulative impacts of the various individual effects of a single project; or b) the cumulative impacts of the project when added to other closely related past, present, and reasonably foreseeable probable future projects.

As was discussed in Section 1.2 of this report, this EIR is a program EIR. It specifically identifies and assesses the overall, or cumulative, effects of buildout per the Draft General Plan. Thus, the earlier analyses in this EIR addressed the cumulative effects of development within Novato's Sphere of Influence. The Draft General Plan itself and related technical reports present information on the cumulative growth in jobs, population, and housing units.

The Draft General Plan contains the City's position on regional issues such as traffic congestion on Highway 101. The Draft General Plan is consistent with the ABAG Regional Plan regarding compact city-centered growth. The development potential within Novato's Sphere of Influence is generally consistent with projections made for the area in the *Marin Countywide Plan*. The EIR for the Countywide Plan determined that there were three potentially significant cumulative impacts that would result from buildout in the county (including the buildout in Novato). These three impacts include the following (from Section 1, pages 18-19 of the *Final EIR for the Marin Countywide Plan*):

1. Increased traffic will result in several roadway segments operating below an acceptable level of service given implementation of funded roadway improvements.
2. The demand for potable water will exceed the existing supply. This is not considered significant since the water agencies have adopted long-range plans to identify potential sources of water and the amount needed.
3. Cumulative buildout will result in increased emission of air pollutants. Only the increase in small particulates (PM10) is considered significant.

This Draft EIR for the Draft Novato General Plan identifies two significant cumulative impacts. These include:

1. Increased traffic will result in segments of Highway 101 and Highway 37 operating below acceptable levels of service.
2. Construction of a new roadway connector between Bel Marin Keys industrial park and Highway 37 will cause a loss of wetlands.

This EIR does not find the impact on potable water to be significant because the North Marin Water District has resources or planned resources to provide for buildout under the Draft General Plan. This EIR does not find air pollution impacts significant because buildout under the Draft General Plan is less than accounted for in the *Bay Area '91 Clean Air Plan*, and, thus, fewer emissions of air pollutants will occur than already projected and planned for by area air quality management plans.

5.3 SIGNIFICANT ENVIRONMENTAL IMPACTS WHICH CANNOT BE AVOIDED

This EIR identifies a number of potentially significant adverse impacts that would result from buildout under the Draft General Plan. The EIR presents mitigation measures that would eliminate those impacts or decrease them to a level that is typically considered less than significant. However, there remain certain impacts that either cannot be satisfactorily mitigated or impacts where there is some question of whether the recommended mitigations are feasible or would be required. The following list describes those impacts for which mitigations may not be possible and/or sufficient.

1. Increased traffic will result in segments of Highway 101 and Highway 37 operating below acceptable levels of service.
2. Construction of a new roadway connector between Bel Marin Keys industrial park and Highway 37 will cause a loss of wetlands.

In addition to the above impacts, if the City does not include the required mitigations recommended in this EIR, then the potentially significant impacts those measures are intended to mitigate would also be judged as remaining significant adverse impacts and should be added to the list above.

It is noted that during the public review process, the City has the authority to add to or subtract impacts from the above list. Ultimately, this EIR is the City's EIR, and the City is responsible for its conclusions. If the City believes, on the basis of data presented in this report, additional data provided during the public review process, or other public data available to the City, that other impacts should be identified as "significant" or that impacts identified as "significant" above are, in fact, not significant, then the City has the authority to add or subtract such impacts. In doing so, the City must provide written support to justify its action(s).

If the City concurs with the conclusions presented in this EIR, and it decides to approve the project, then the City will be required to issue a Statement of Overriding Considerations (per Section 15093 of the *CEQA Guidelines*) that explains why the project is being approved despite these unavoidable adverse significant impacts.

5.4 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

The *CEQA Guidelines* (Section 15126[f]) requires that an EIR discuss irreversible environmental changes that would occur if the project were approved. Again, these impacts are all discussed in detail in the earlier analysis of each environmental factor. Development under the Draft General Plan would irrevocably commit some undeveloped portions of the City to residential, commercial, industrial, and office use. The commitment of financial resources, energy, raw materials, and labor would be associated with this conversion of land use.

The use of nonrenewable resources during the construction and use phases of the project would be irreversible since a large commitment of such resources makes removal or non-use thereafter unlikely. Primary impacts and secondary impacts generally commit future generations to similar uses.

The following list summarizes those resources that would be irretrievably committed to the development of the Novato Sphere of Influence (these resources were assessed in detail in the preceding sections):

1. Loss of vegetation/wildlife habitat.
2. Loss of open space character.
3. Commitment of energy and materials for construction.
4. Increased demand for energy and public services.
5. Increased demand for carrying capacity of streets and intersections.
6. Increased demand for water resources, sewage treatment, and other utilities.
7. Increased air pollution.

These changes must be weighed against the provision of increased housing, jobs, and tax revenues. In addition, the Draft General Plan provides for the protection of many of the remaining natural resources. It provides an explicit schedule for providing public services. Although irreversible changes will occur, these changes are not as great as would occur under the existing General Plan. The Draft General Plan will retain the basic character of Novato.

5.5 THE RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF THE ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

The Draft General Plan is a policy document intended to guide the conservation and development of Novato over the foreseeable future. The Draft Plan takes a long-term view of the city's future. It seeks to maintain and enhance the environment. The cumulative or long-term effects of the project were summarized in the previous sections describing cumulative impacts. To summarize, the major long-term impacts of development of Novato will be:

1. Loss of open space character.
2. Increased traffic on local streets.
3. Increased noise in adjacent neighborhoods.
4. Increased demand for public services and utilities
5. Loss of vegetation and wildlife habitat.
6. Increased housing starts.
7. Increased air pollution.

5.6 PROJECT ALTERNATIVES

CEQA requires that a "reasonable range of alternatives" to a proposed project be considered in environmental impact reports. The evaluation of an alternative need not be as exhaustive as the evaluation of the project as proposed. The focus of the alternatives analysis is to identify and assess alternatives that can eliminate or substantially reduce the significant impacts identified for the project as proposed (*CEQA Guidelines, Section 15126d*).

This EIR identifies the following significant impacts that are not mitigated by proposed policies and programs of the General Plan:

1. Increased traffic will result in segments of Highway 101 and Highway 37 operating below acceptable levels of service.
2. Construction of a new connector between Bel Marin Keys industrial park and Highway 37 and designation of land through which this connector may go as Public Utilities will cause a loss of wetlands.

Elimination of this connector roadway is an option under any of the alternatives including the Draft Plan. Not constructing this connector will eliminate identified impacts on biotic resources. However, it will also eliminate an alternative access route that could be used during an earthquake or other emergency. Secondly, this connector provides some traffic circulation benefits as described in the Traffic section. Not constructing it will eliminate these circulation benefits.

The City can make a decision on this connector independently of selecting a Plan alternative. Inclusion or exclusion of this connector can be part of any alternative. As such, this issue is not discussed further when comparing the merits and demerits of each alternative below.

In preparing the Draft General Plan, two alternatives were developed and assessed in order to determine a "preferred plan alternative.". These alternatives are described and discussed in the *Plan Alternatives Report for the General Plan Revision* (January, 1994, on file with the City), *Economic Evaluation and Strategy Report* (November, 1993, prepared by Mundie & Associates, on file with the City), *Economic Issues Background Report* (June, 1993, prepared by Mundie & Associates, on file with the City), and *Evaluation of General Plan Alternatives: Circulation Issues* (December, 1993; on file with the City). Environmental effects were considered in assessing the three alternatives, and the current Draft General Plan was identified as the preferred alternative.

In addition to the Draft General Plan and these two original alternatives, five additional alternatives have been identified and prepared by City staff. Each of the seven alternatives is discussed below. The seven alternatives include the following:

1. Existing General Plan. This alternative includes development per the land use designations and policies of the City's existing 1981 General Plan. This alternative was assessed by the City when selecting the "preferred plan alternative."
2. Reduced Development. This alternative assumes a moderate reduction in development potential. This is the second alternative that was assessed by the City when selecting the "preferred plan alternative."

3. Increased Development. This alternative incorporates a modest increase in development potential. It is based on applying current *Marin Countywide Plan* land use designations for areas outside the Novato City Limits but within the City's Sphere of Influence.
4. Greatly Reduced Development. This alternative incorporates a 40 percent decrease in the development allowed under the Draft General Plan.
5. Environmental Constraints Emphasis. This alternative would allow about the same amount of development as the Draft Plan, but development would be located so as to maximize environmental protection.
6. Compact Development. This alternative would increase development density and intensity in the central area of Novato and reduce density and intensity in outlying areas. It would allow about the same amount of development as the Draft Plan.
7. No Growth. This alternative would allow only the legal minimum development on all parcels.

The development potential for each alternative is described in Table 32 below. Tables 33 and 34 show the distribution of this buildout for the various Major Development Sites (described in Table 7 and shown on Figure 3) and other classes of sites. The buildout described in these tables is the estimated maximum development possible on identified sites (Westfall, personal communication).

In assessing project alternatives to determine whether they are feasible, the EIR preparers must also examine whether the alternative in question is consistent with the project Objectives. The Objectives for this project are the Draft General Plan Goals which were previously listed in Section 2.2. It is noted that the project alternatives are compared as regards their effect on the environment. There may be other effects, such as the number of jobs produced, the economic effect on the development potential of a particular property, and effects on the "character" of the community. These other effects may be important to the citizens of Novato, and the City may amend or change its General Plan based on these other effects. These other effects are included in some of the Draft Plan Goals (i.e., the project Objectives). It is not the purpose of this comparison to determine "what is best" for the City by taking into account all the varied aims and interests of its citizenry. This debate occurred when the City decided on its preferred alternative and will occur again as the City decides on its final General Plan. The purpose of this EIR is to compare the general, or cumulative, environmental effects of the seven alternatives as compared to the Draft Plan as proposed. This information, when combined with other data provided the City Council, will aid them in making an informed decision.

Table 32
Buildout Potential For General Plan Alternatives

Alternative	Residential Units	Non-Resid. (Sq. Ft.)
Draft General Plan	5,640	5,740,000
Alternative 1 - Existing General Plan	6,270	7,440,000
Alternative 2 - Reduced Development	5,010	4,380,000
Alternative 3 - Increased Development	5,730	6,210,000
Alternative 4 - Greatly Reduced Development	3,380	3,440,000
Alternative 5 - Environmental Constraints Emphasis	5,640	5,740,000
Alternative 6 - Compact Development	5,640	5,740,000
Alternative 7 - No Growth	2,100	1,100,000

Source: Novato Community Development Department, November, 1995

Table 33
Alternative Residential Buildout for Major Sites

Sites	Project Alternative							
	DGP	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7
Total Residential Units	5,640	6,270	5,010	5,690	3,380	5,640	5,640	2,110
Sites 4 & 5 (School Dist. Sites)	270	320	250	270	150	270	300	150
Site 7 (Bahia)	510	1,050	400	510	300	510	300	200
Site 11 (Pinheiro)	380	540	300	380	300	380	450	100
Site 26 (New Hamilton Partner.)	960	960	960	960	960	960	1,000	960
Site 27 (Anderson-Rowe)	310	310	260	310	200	310	350	100
Site 40 (Buck Center)	140	140	140	140	140	140	140	140
Other "Major Develop. Sites"	540	1,030	540	540	500	540	640	160
Shopping Centers	610	0	610	610	0	610	610	0
Downtown Area	270	270	250	270	200	270	350	100
Other Infill	1,650	1,650	1,300	1,700	630	1,650	1,500	200

Source: Novato Community Development Department, November, 1995

Table 34
Alternative Non-Residential Buildout for Major Sites

Sites	Project Alternative (x 1,000)							
	DGP	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7
Total Non-Residential (x 1,000)	5,740	7,440	4,380	6,210	3,440	5,740	5,740	2,160
Site 6 (San Marin Bus. Park)	1,100	1,100	900	1,100	300	1,100	1,100	120
Site 10 (North of Olive)	160	160	140	160	100	160	160	100
Site 11 (Pinheiro)	260	120	220	260	160	260	260	100
Site 20 (Hospital Site)	220	300	220	220	220	220	220	220
Site 23 (Caltrans)	110	100	100	110	50	110	110	30
Site 24 (Hanna Ranch)	330	330	280	330	140	330	330	70
Site 26 (New Hamilton Partner.)	830	2,000	830	830	830	830	830	600
Site 30 (Hamilton Reuse)	720	720	720	720	720	720	720	100
Site 35 (Indian Valley Colleges)	400	400	200	400	200	400	400	200
Site 40 (Buck Center)	220	220	220	220	220	220	220	220
Other "Major Develop. Sites" & Infill	1,390	2,000	550	1,860	500	1,390	1,390	400

Source: Novato Community Development Department, November, 1995

It is noted that the *CEQA Guidelines* require that an EIR address the impacts that would result if no project were approved, and the site were left in its current state. Obviously, if this were the case, then none of the impacts identified in this report would occur. There would be no development of wetlands or diked baylands, no loss of biotic habitat or resources, no increase in risk from geologic or flooding hazards, no new traffic, no additional noise or air pollution, no increased demand for public services, etc.

However, a "no project" alternative of this type is not deemed feasible in the case of an EIR on a General Plan. First, State law requires a city to have an approved General Plan. If the proposed General Plan is not approved, then a new plan would have to be prepared. Eventually, a General Plan will be adopted to comply with State law.

Second, much of the development potential is infill on existing lots where all that is required is a building permit or some other form of permit that does not require discretionary approval. This development would appear to be legally permissible, and perhaps mandated, even if the Draft General Plan were denied.

It is not feasible to not have a General Plan. As such, this "no project" alternative is not a legally feasible alternative in this case. Alternative goals, objectives, policies, and programs that comprise this required General Plan are feasible. These alternatives are addressed in the following sections.

Alternative 1 - Existing General Plan

This alternative includes future development per the land use designations, goals, policies, and programs of the existing General Plan. This is the "no project" alternative analysis based upon existing plans and consistent with available infrastructure and community services. Buildout under the Existing General Plan would include the potential for about 6,270 new residential units and 7,880,000 square feet of new non-residential development.

This maximum buildout includes about 630 more residential units than allowed under the Draft General Plan and an increase of 1,740,000 square feet of non-residential development beyond the buildout allowed under the Draft General Plan. This is an increase of about 11 percent more new residences and 30 percent more new non-residential development when compared to the Draft General Plan.

This buildout would occur per the goals, policies, and programs of the existing City General Plan. This alternative was extensively reviewed during the process that led up to selecting the Draft General Plan as the preferred alternative. The background reports incorporated herein by reference (listed in Section 1.3 of this EIR) contain analyses of this alternative's effects as regards traffic, fiscal issues, economic issues, and planning issues. The reader is referred to those documents for a fuller understanding of the effects of this alternative. To summarize, the following effects would occur.

1. Land Use. There could be more development than could occur under the Draft General Plan. This increased development would result in a slightly larger population for the City as well as more jobs. The existing General Plan does not explicitly link future development with the ability of the infrastructure to support that development. The Draft General Plan contains policies and programs that require that future development be allowed only so far as adequate public facilities and services can be provided.

The existing General Plan would allow considerably more non-residential development in areas removed from the downtown (e.g. west of Gness Field, and in various areas east of Highway 101). The existing General Plan has as an objective to emphasize the Downtown as the economic center of the city. However, since its adoption, there has been considerable development allowed outside the downtown. Additional development in outlying areas would occur under the existing General Plan land use designations. The Draft General Plan focuses future economic growth on the Downtown. While some non-residential development would still occur away from the downtown, there would be an overall reduction in the amount of such development.

Development under the existing General Plan would include more development in currently unincorporated portions of the City's Sphere of Influence. The major addition would be industrial development near Gness Field.

2. Geology. The existing General Plan does not allow residential development on "bay plains" and "marshlands." However, it does allow non-residential development on such areas. Otherwise, its policies related to geologic safety include requirements to build in conformance with the Uniform Building Code, require geotechnical studies where there is landslide potential, and not locate public structures near active earthquake faults. In general, both the existing and the Draft General Plans will protect residents from geologic hazards. The Draft Plan provides more detailed guidance for when geologic review is required. More importantly, the Draft Plan Land Use Designations Map decreases, though it does not eliminate, development potential on unstable slopes and in areas underlain by bay mud. As such, fewer people and improvements will be at risk during seismic events.
3. Hydrology. The existing General Plan generally protects residents from flooding. The Draft General Plan adds more explicit policies that address current conditions. The existing General Plan does not contain specific policies for reducing water pollution. These policies are included in the Draft General Plan so that the Plan is consistent with current Regional Water Quality Control Board requirements. The Draft General Plan also contains specific policies and programs to control soil erosion and to ensure that new development does not cause off-site flooding. While these policies are not included in the existing General Plan, they are already codified requirements in the City Code.
4. Wetlands. The existing General Plan does not allow residential development on "bay plains" and "marshlands." The Draft General Plan strengthens this restriction by reducing non-residential development in areas that were once within the shoreline of San Francisco Bay (east of Highway 101). The existing General Plan designates most of the area once within the shoreline of San Francisco Bay as Conservation, allowing one unit per 10 acres. The Draft General Plan alters the density by allowing one unit per 60 acres for lands within the Sphere of Influence but outside the existing City Limits. For the residual residential development allowed within that shoreline that occurs on areas that have not already been filled, the Draft Plan calls for clustering of development and mitigation for loss of any habitat. There would be potentially more loss of wetlands (as they are defined in the Draft General Plan) from development under the existing General Plan. This would be a significant adverse impact of this alternative.

5. Vegetation and Wildlife. The loss of wetlands discussed above would reduce habitat required by plants and animals. Certain of these species are dependent on wetlands. It is possible that the habitat loss could include habitat or populations of Special Status Species.

The existing Plan has goals and policies to protect biotic species and wetlands. The Draft Plan expands these goals by requiring the preparation of a Constraints Analysis for sites that include or are adjacent to sensitive resources. The requirement of preparing a Constraints Analysis will further reduce the possible significant impact on biotic species and habitat.

While stream channels are protected by City and State ordinances and laws, the buffer area beside the stream channel is not afforded such protection. The Draft General Plan includes a Watercourse Protection Overlay Zone that severely restricts development within 50 feet of streams. Thus, development under the existing General Plan would result in more loss of riparian habitat with consequent impacts on wildlife.

The Draft General Plan also contains policies and programs that strengthen environmental protection regarding water quality, preservation of woodlands, preservation of agricultural lands, and the requirement for clustering of development. While many of these same requirements are contained in the existing General Plan or the adopted City Code, the Draft General Plan provides a more specific definition of the need to avoid impacts to biotic resources.

6. Noise. Future traffic noise levels resulting from the existing General Plan were compared to the traffic noise levels resulting from the Draft Plan to determine if there would be a substantial difference in the noise environment in Novato under these various plan alternatives. Future noise levels would be within 1 decibel of each other along the roadway network regardless of the development scenario which is selected. The noise environment would, therefore, be the same in the future within the City of Novato regardless of the development scenario. There is not a substantial difference with respect to the noise and land use compatibility issues associated between the various plans. Noise is, therefore, not a determining factor in the selection between the various alternatives.
7. Air Quality. Because more development could occur under the existing General Plan, there would be more traffic and consequent emission of air pollutants. However, in neither case would the impact be significant.
8. Aesthetics. Under the existing General Plan, more development on or near ridgelines could occur. This would affect views of the important visual resources. The Draft General Plan reduces development potential on the baylands east of Highway 101, thereby decreasing the visual impact of development within this visual resource. The Draft General Plan strengthens design review guidelines for areas with sensitive visual resources, including the Downtown.
9. Transportation. A detailed assessment of traffic impacts for this alternative was presented previously in Section 4.5. To summarize that earlier discussion, traffic volumes from buildout under the existing General Plan will increase by 8,200 trips during the a.m. peak hour and 15,600 trips during the p.m. peak hour. These increases represent a 47 percent increase in both the a.m. and p.m. peak hour traffic volumes.

This traffic will result in nine of the 24 study intersections operating at unacceptable levels. The traffic analysis describes the mitigations that would be required at those intersections. More importantly, the increased traffic volumes will result in two sections of Highway 101 and one section of Highway 37 operating at Level of Service F during the p.m. peak hour period. As the traffic analysis states, a Level of Service F on Highway 101 will occur with or without additional development in Novato. However, the traffic generated by buildout under this alternative substantially aggravates an existing problem. Because this alternative generates more traffic than the other alternatives, it will have the most significant impact on the future operating conditions on Highway 101 and Highway 37.

The increased traffic will also reduce safety conditions on roadways and result in increased traffic on certain residential streets. The policies and programs aimed at ensuring traffic safety are not as strong in the existing General Plan as compared to the policies and programs of the Draft General Plan.

10. Public Services and Facilities. The existing General Plan would allow more growth. The larger population would generate a correspondingly larger demand for public services and recreational opportunities. This demand will be reduced by the restrictions contained in the Draft Plan. The Draft Plan contains specific linkages between where and when development occurs and the need for that development to finance necessary upgrading of public services. The Draft Plan establishes Levels of Service for public services and facilities; these Levels of Service are not contained in the existing General Plan. Finally, the Draft General Plan contains a policy for the City to adopt an ordinance that requires review of new development as regards the ability of public service providers to meet established Levels of Service. The existing General Plan does not contain specific policies or programs that allow the City to review new development in this fashion. As such, development could occur under the existing General Plan which would result in overloading certain public services.

The existing General Plan would allow extensive development on steeper hillside properties. Such areas are hazardous as regards landsliding and fire exposure. The Draft General Plan reduces development potential on such sites and, therefore, reduces the risk from fire. This reduces the demand for fire and emergency response services.

Summary

The existing General Plan contains many of the same goals as the Draft Plan. The existing General Plan aims to regulate development so that residents are not exposed to unsafe levels of noise, geologic-related hazards, fire hazard, crime, and air pollution. It aims to protect natural resources, visual resources, and the sense of neighborhood. It balances these protections by designating undeveloped lands to allow extensive development of commercial, office, and industrial development as well as 6,267 additional residential units. Because the amount of development allowed exceeds the amount possible under the Draft Plan as well as several of the other alternatives assessed in this report, there will be greater impact on many of the natural resources, visual resources, and public services and facilities. In addition, the existing General Plan policies providing protection of natural resources are not as detailed and provide less protection than the Draft Plan.

Alternative 2 - Reduced Development

This alternative was derived by the General Plan consultants and the City in the process of selecting the preferred plan alternative. It would allow less development than the Draft Plan (see Table 32 for development potential). This alternative would allow 11 percent fewer residential units and 24 percent less non-residential development than the Draft Plan. Compared to the existing General Plan, it would allow 20 percent less residential development and 41 percent less non-residential development. This alternative was also extensively reviewed during the process leading up to the selection of the Draft Plan as the preferred plan. Many of the impacts of this alternative are addressed in more detail in the background reports listed in Section 1.3 of this EIR. Tables 33 and 34 show how development under this alternative compares with the Draft Plan and other alternatives.

This alternative would have the following effects when compared to the Draft General Plan.

1. Geology. This alternative will reduce the amount of development on steep slopes. This will reduce the number of people and improvements exposed to risk from seismic events and unstable slopes. However, the Draft General Plan policies and programs already adequately protect people and improvements from these hazards.
2. Hydrology. The reduction in development potential will reduce the amount of new peak runoff. However, the Draft General Plan already includes policies and programs that ensure that new development will not be subject to peak flooding as well as not producing runoff that will significantly affect other properties.
3. Wildlife and Vegetation. There will be a decrease in development potential, but it is likely that the same vacant properties would be developed. The impact on plants and wildlife would be approximately the same as for the Draft General Plan.
4. Transportation. A detailed assessment of traffic impacts for this alternative was presented previously in Section 4.5. To summarize that earlier discussion, traffic volumes from buildout under Alternative 2 will increase by 6,700 trips during the a.m. peak hour and 10,700 trips during the p.m. peak hour. These increases represent a 34 percent increase in the a.m. peak hour traffic volume and a 32 percent increase in the p.m. peak hour traffic volume.

This traffic will result in five of the 24 study intersections operating at unacceptable levels. The traffic analysis describes the mitigations that would be required at those intersections. The increased traffic volumes will result in two sections of Highway 101 operating at Level of Service F during the p.m. peak hour period. However, unlike the Draft Plan and the existing General Plan alternatives, this alternative will not result in Highway 37 operating below LOS E. As the traffic analysis states, a Level of Service F on Highway 101 will occur with or without additional development in Novato. This alternative generates the least traffic of the three alternatives assessed in the traffic analysis. As such, it reduces the impacts related to highway congestion.

Traffic generated by this alternative will generate safety hazards on roadways and result in increased traffic on certain residential streets. However, the safety impacts and impacts on residential streets will be less than generated by the Draft Plan. It is noted that the policies and programs of the Draft Plan aimed at ensuring traffic safety and restricting new traffic in residential areas are adequate to reduce these

impacts to a level that is not significant. Again, this alternative has the least traffic impact when compared to the Draft Plan and the existing General Plan.

5. Air Quality. The alternative will reduce traffic and consequent emission of air quality pollutants. However, this impact is not considered significant in any case.
6. Noise. The alternative will reduce traffic and consequent new noise. However, the Draft General Plan already ensures that existing residential neighborhoods will be protected from new noise sources and that new development will not be exposed to unacceptable noise levels.
7. Aesthetics. The reduction in development potential will mean that less area may be developed, thereby retaining more unaltered views. However, with the exception of slopes over 20 percent, the difference is expected to be slight.
8. Public Services. The decrease in development potential will correspondingly decrease the demand for new public services. Because water, storm drainage, and wastewater services are already masterplanned for improvements to serve buildout beyond that allowed under the Draft General Plan, the difference for these services is insignificant. There will be less need for new staff and equipment for fire and police agencies. However, there will also be a decrease in assessed valuation which is the basis for these agencies' revenues. There will be fewer new students generated and less need for new schools.
9. Recreation. The alternative will decrease population and the demand for new recreational services and facilities. However, the Draft General Plan contains policies and programs to ensure that new development will be served by new recreational services and facilities, so the difference is not significant.
10. Land Use. There would be no substantial changes in land use issues other than there would be slightly less development of vacant lands.

Summary

In general, this alternative will reduce the impacts that would result from the Draft Plan. It eliminates the significant impact of Highway 37 operating below LOS E in the year 2010.

Overall, this alternative reduces the development potential. It decreases the overall final population size of Novato. It decreases the number of new jobs that would be created. This correspondingly decreases the demand for public services and the amount of new trips generated. The reduction in trips decreases traffic congestion, the amount of air pollutants, emitted, and the amount of new noise generated.

Alternative 3 - Increased Development

This alternative assumes that future development within currently unincorporated portions of the City's Sphere of Influence would occur consistent with current County land use designations for these properties. The differences between the City's Draft Plan land use designations and the County's land use designations were summarized previously in Section 1.3. As shown on Table 32, this alternative would result in a nominal increase in residences (50 more units than under the Draft Plan). The primary difference would be the increased non-residential development potential (an additional 470,000 square feet) which would occur primarily on Site 33 (west of Gness Field).

This alternative would include the same policies and programs of the Draft Plan except that wetlands would be defined using the U.S. Army Corps of Engineers definition rather than the U.S. Fish and Wildlife Service definition (as described in EN Policy 10). The Army Corps definition is more exclusive in that a site must meet soils, hydrologic, and vegetative criteria to be classified as a wetland. This change in wetlands definition is a necessary part of this alternative since expanded development of many of these sites (e.g., Site 33) could not occur given the Draft General Plan wetland definitions and policies.

Development of this alternative would have the following effects.

1. Geology. Additional development would be permitted in areas underlain by bay mud, and development on bay mud has more potential for damage during major seismic events. However, it is assumed that development would not be permitted unless it could be proven that structures could withstand maximum credible seismic events. The difference is not significant.
2. Hydrology. The additional development possible under this alternative will slightly increase peak runoff. This is not a major issue given the policies and programs of the Draft Plan related to preventing flooding and controlling soil erosion.
3. Wildlife and Vegetation. Additional areas within the Bayfront Overlay Zone will be developed. This will result in the loss of wetlands as they are currently defined in the Draft General Plan. It may result in segmentation and/or isolation of jurisdictional wetlands that will remain undeveloped. It may result in the loss of habitat used by Special Status Species. It will substantially reduce the potential for future wetland restoration. Outside the Bayfront Overlay Zone, this alternative may result in increased filling of lands that are defined as wetlands under the Draft General Plan. The loss of habitat is considered a potentially significant adverse impact of this alternative. The precise impacts would have to wait until site surveys of affected parcels were conducted.
4. Transportation. A detailed quantitative analysis of the traffic effects of this alternative was not conducted. The detailed analysis done for the previous two alternatives was ordered by the City so that the City could understand the traffic implications of the three alternatives under consideration for selection as the preferred alternative. This level of detail exceeds the level of analysis generally warranted for an alternatives analysis in an EIR.

This alternative will slightly increase development potential. The main area that could be affected would be the area near the airport. Development of Site 33 could generate substantial amounts of new traffic that would have to access the site via Binford Road. While a determination cannot be made without a detailed site plan and a traffic study, additional traffic on this road and its intersection with Atherton Avenue could result in the need for roadway and intersection improvements.

4. Air Quality. The slightly increased traffic generated by this alternative would correspondingly increase the emission of air pollutants. However, the increase is insubstantial and does not pose a significant effect.
5. Noise. The slightly increased traffic generated by this alternative would correspondingly increase traffic noise on some streets. However, the increase is insubstantial and does not pose a significant effect.

6. Aesthetics. The increased development will result in more intense development on a number of sites. Again, a major difference would be the non-residential development of Site 33. This site is part of the north entryway into the City. Development will extend views of urban development from existing commercial/industrial development along Rush Landing Road up along the west side of the airport. Development will likely block existing views across undeveloped, open space.
7. Public Services. Development of Site 33 will require extension of water and sewer to the site. This is unlikely to be a significant impact as both NSD and NMWD can provide service so long as lines are extended. Development in this area will also require additional police and fire response. However, the increase in demand is unlikely to be substantial enough to be deemed significant.
8. Recreation. The increased development will slightly increase recreational demand. This effect is insignificant.
9. Land Use. Development under this alternative would be consistent with existing County land use designations for the area. Areas currently used for grazing could be developed thereby displacing agriculture.

The effects of buildout within the SOI per the Countywide Plan were assessed in the EIR for that Plan. The Countywide Plan and the EIR on that plan assumed an Army Corps definition of wetlands. No significant effects were identified other than the countywide effects regarding air quality (small particulates) and traffic.

Summary

This alternative would result in more residential and non-residential development. It would result in increased development of diked baylands within the area that the Draft General Plan defines as the Bayfront Overlay Zone. Increased development of these diked baylands and other wetlands within Novato are considered a significant adverse impact. It is again noted that this analysis is intended only at the level CEQA requires for discussion of alternatives. It is not intended as a site-specific analysis of conditions nor impacts on any particular site; those analyses must wait until specific development applications are filed and CEQA analyses are performed on the project and the site.

Alternative 4 - Greatly Reduced Development

Because Alternative 2 (described above) only reduces residential development potential possible under the Draft General Plan by 11 percent and non-residential development potential by 24 percent, it was determined that an additional alternative that reduced development intensity should be examined. This alternative should pose a lower, but feasible, level of development. The General Plan consultants and City staff were queried to determine an alternative that met these criteria. It was determined that for the purposes of the EIR analysis, an alternative that reduced both the residential and non-residential development potential of the Draft General Plan by 40 percent would be feasible and provide an alternative at the low end of the development scale. The distribution of this decreased buildout potential is shown on Tables 33 and 34. Otherwise, this alternative maintains the policies and programs of the Draft General Plan. This alternative would have the following effects:

1. Geology. Depending on where development was allowed, this alternative could reduce the amount of development on steep slopes, bay muds, and other areas with geological constraints. However, the Draft General Plan policies and programs already adequately protect people and improvements from these hazards.
2. Hydrology. The reduction in development potential will reduce the amount of new peak runoff. However, the Draft General Plan already includes policies and programs that ensure that new development will not be subject to peak flooding as well as not producing runoff that will significantly affect other properties.
3. Wildlife and Vegetation. This alternative would provide additional opportunities for reducing development intensity on lands with important biotic resources. For example, this alternative reduces development potential on Site 7 (Bahia) from 510 units to 300 units. This would provide planning options that would allow preservation of important biotic habitat. It is possible that many to most wetlands, properties supporting sensitive species populations, woodlands, riparian habitat, and other significant biotic habitat could be left undisturbed. The Draft Plan already contains policies and programs intended to protect and preserve all significant biotic resources. However, this alternative would result in more biotic habitat remaining in an undeveloped state.
4. Transportation. This alternative reduces the number of new trips by about 40 percent. This will reduce impacts related to safety concerns and increased traffic on residential streets. It is likely that it will reduce the number of study intersections that will require mitigation. It will reduce congestion on Highway 101 and Highway 37. While it will not eliminate the fact that Highway 101 will operate at Level of Service F, it substantially reduces the amount of new, Novato-generated traffic added to Highway 101. As stated in the traffic analysis, a Level of Service F will occur on this highway even if no additional development occurs in Novato.
5. Air Quality. The alternative will reduce traffic and consequent emission of air quality pollutants. However, this impact is not considered significant in any case.
6. Noise. The alternative will reduce traffic and consequent new noise. However, the Draft General Plan already ensures that existing residential neighborhoods will be protected from new noise sources and that new development will not be exposed to unacceptable noise levels.
7. Aesthetics. The reduction in development potential will mean that less area may be developed, thereby retaining more unaltered views. However, the reductions are not so significant on any particular site that the reduced density will significantly affect views. Sites to be developed will still be altered to eliminate existing views of open space.
8. Public Services. The decrease in development potential will correspondingly decrease the demand for new public services. Because water, storm drainage, and wastewater services are already masterplanned for improvements to serve buildout beyond that allowed under the Draft General Plan, the difference for these services is insignificant. There will be less need for new staff and equipment for fire and police agencies. However, there will also be a decrease in assessed valuation which is the basis for these agencies' revenues. There will be fewer new students generated and less need for new schools.

9. Recreation. The alternative will decrease population and the demand for new recreational services and facilities. However, the Draft General Plan contains policies and programs to ensure that new development will be served by new recreational services and facilities, so the difference is not significant.
10. Land Use. There would be no substantial changes in land use issues other than there would be less development of vacant lands.

Summary

In general, this alternative will reduce the impacts that would result from the Draft Plan. It eliminates the significant traffic impact on Highway 37. Overall, this alternative reduces the development potential. It decreases the overall final population size of Novato. It decreases the number of new jobs that would be created. This correspondingly decreases the demand for public services and the amount of new trips generated. The reduction in trips decreases traffic congestion, the amount of air pollutants, emitted, and the amount of new noise generated. It will result in more undeveloped biotic habitat.

Alternative 5 - Environmental Constraints Emphasis

The City has defined this alternative as allowing approximately the same amount of development as the Draft Plan but clustering or designing that development to provide maximum environmental protection. Specific alternative policies were not presented. For purposes of this analysis, this alternative will include the following:

1. No filling of wetlands over 0.2 acres in size as they are defined in the Draft Plan.
2. No construction within 300 horizontal feet of any ridgeline within a scenic area shown on Figure 18 unless this prohibits development of a legal parcel.
3. Clustering of development to preserve the maximum amount of biotic habitat on all Major Development Sites.
4. Expansion of the buffer zone along streams from 50 feet to 100 feet.
5. Preservation of native woodlands by requiring maximum clustering on sites where woodlands cannot be avoided. On sites where there is a mix of woodlands and grasslands, development will be clustered on grassland portions of the site.

This alternative would have the following effects.

1. Geology. This alternative will not substantially alter the number of residences or buildings constructed on bay mud. While clustering may allow units to avoid steeper slopes, this option already exists in the Draft General Plan. It is possible that fewer buildings will be constructed on locations with geologic constraints, but the differences are minor.
2. Hydrology. There will not be any major differences in the amount of runoff generated or development in flood-prone areas.
3. Wildlife and Vegetation. This alternative will provide a substantive benefit for wildlife and vegetation. The alternative is defined to maximize preservation of biotic habitat and preservation of biotic populations. This alternative will have a

substantial positive effect on wetlands, native woodlands, Special Status Species, riparian communities, and biotic populations in general. Ridgelines will remain open as wildlife travel corridors and have sufficient undeveloped width to provide wildlife habitat. Extension of the watercourse protection zone will enhance the restoration of riparian habitat and provide additional wildlife travel zones.

4. Aesthetics. There will be less development near ridgelines; this will preserve ridgelines as open space. The requirement to avoid woodlands and build in grasslands on sites that contain a habitat mix may result in more visible development than if residences are hidden or buffered by surrounding trees. Clustering of development will result in additional open space. The requirement for clustering could provide impetus for creative architectural design.
5. Other Areas of Impact. The alternative will not change development intensity. As such, this alternative will have similar traffic, noise, air quality, recreation, and public service impacts to those described for the Draft Plan. As regards land use, there will be more undeveloped land after buildout under this alternative.

Summary

The major benefits of this alternative are the increased protection for biotic habitat and communities and less visual impact from new development. Assuming the same development intensity on any site, there are no disadvantages to this alternative other than it could prove challenging to design projects to meet the criteria set forth in this alternative. Also, increasing the density on any one portion of a site may result in increased localized impacts. It is also possible that future interpretation of these policies could result in decreased development on certain sites. This would not be a disadvantage from an environmental perspective, but it might not be consistent with other City Objectives.

Alternative 6 - Compact Development

This alternative as defined by the City shifts development from outlying areas to central areas of Novato. The differences are shown on Tables 33 and 34. A review of these tables shows that the differences are not major. The primary difference that shows up in those tables is that residential development on Site 7 (Bahia) would be reduced. All other areas would be increased except for "Other Infill." For non-residential development, there are no differences.

This alternative would essentially have no differences from the Draft General Plan except that there would be less development of the Bahia site. As explained in previous discussions, less development of this site would have positive effects as regards biotic resources. But overall, this is a minor difference.

This alternative could be amended to decrease density on Sites 7, 21, 23, and 40. These are all major development sites located distant from the center of Novato. For purposes of analysis, there would be a development potential of 207 units on Site 7 (Bahia) and 43 units on Site 21 (Renaissance Faire). No development beyond the legally required minimum would be permitted on Site 23 (Caltrans) nor on Site 40 (Buck Center). The 250 units subtracted from Sites 7 and 21 would be added to Sites 4, 5, 11, 27, and infill sites near the center of Novato. The 330,000 square feet of non-residential development could be added to Site 6, 11, 17, 19, 20, 30, 35, or other Infill sites..

This alternative would have the following effects.

1. Geology and Hydrology. This alternative would eliminate some development on bay muds (e.g., Site 23). There would be increased development intensity in areas nearer the center of town which would increase runoff on those sites, but these drainage differences are minor and of no importance.
2. Wildlife and Vegetation. This alternative would reduce biotic impacts on Sites 7 and 21. Both of these sites contain substantial native woodland stands. Reducing the development potential on these sites would result in preservation of more woodlands as well as more biotic habitat in general. Elimination of development on Site 40 will result in the preservation of existing biotic habitat on that site. Increasing development intensity on the sites listed previously will likely reduce the amount of biotic habitat that will remain on these sites. However, these receiver sites are already targeted for intense development, and it is unlikely that substantial biotic habitat would be retained if these sites developed per the Draft Plan land use designations.
3. Transportation. Elimination of development on Sites 23 and 40 will eliminate traffic congestion and access problems near these two sites. Otherwise, the traffic impacts will not be substantially different from the impacts identified for the Draft Plan.
4. Aesthetics. The reduction in density on Sites 7 and 21 will be minor and probably noticeable only to nearby residents, though it is possible that the reduced density on Site 21 would be noticeable to travelers on Highway 37. Elimination of development on Site 23 would be a major benefit as development on this site extends urban development into an undeveloped area on Highway 37. Elimination of development on Site 40 would eliminate the visual effects of this development at the northern entry top the City. More intense development of other sites may not significantly increase visual impacts since these receiver sites are already slated for relatively intense development.
5. Noise and Air Quality. The location of these impacts would shift, but the overall level of impact will remain similar as described for the Draft Plan.
6. Public Services. There would not be the need to extend water and sewer to several sites (e.g., Site 23 and 40). Reduced development on Sites 7 and 21 will reduce the workloads of police and fire departments since they will not have to respond to as many calls in distant locations. More intense development of other sites will not significantly affect public service providers.
7. Land Use. Elimination of development on Site 40 could mean that the site would not need to be annexed into the City. As such, there would be no need to amend the City's Sphere of Influence to include this site.

Development under this alternative will result in certain parcels remaining vacant (or developed to the minimum required by law)

Summary

This alternative has substantive positive effects in preserving additional biotic habitat and resources and aesthetic resources. Increasing the density on any one portion of a site may

result in increased localized impacts. There are also minor benefits of not extending public services and eliminating the need for roadway and intersection improvements in locations where these improvements would not otherwise be needed. It is noted that non-development of Site 40 would eliminate a host of impacts that were identified in the EIR prepared for the project proposed for that site (i.e., the EIR on the *Buck Center for Research in Aging*, EIP, 1994). This alternative may not meet other Draft General Plan goals.

Alternative 7 - No Growth

As described previously, a strict "no development" alternative is not considered legally feasible for constitutional reasons. The environmental assessment of existing conditions and impacts of any development is contained within the discussion of each environmental impact area in Section 4.0 of the Draft EIR.

This No Growth alternative would allow only the legally required minimum development on all parcels. Again, the City's estimate of how this alternative would affect various sites is shown on Tables 33 and 34. This is an assumption of buildout for CEQA alternatives assessment only. If this alternative were adopted by the City, the City may determine, based upon future site-specific analyses and ownership information, that more or less development under the law is required on any one parcel. Other than changes to the definition of land uses, the policies and programs of the Draft Plan would remain the same. This alternative would have major environmental effects as it would substantially decrease many to most of the impacts identified in this EIR. These effects include the following.

1. Geology. Development per this alternative would substantially reduce development on bay muds and unstable slopes. There would be ample space on most parcels to allow buildings to be constructed on stable ground. Fewer new residences and other buildings would be subject to seismic damage.
2. Hydrology. There would be less new impervious surface and therefore less peak runoff. However, this is not a significant difference.
3. Wildlife and Vegetation. This substantial reduction in development will result in preservation of considerably more biotic habitat. The reduced development potential for any site will allow sensitive location and design of projects to avoid sensitive biotic resources. Wetlands, woodlands, riparian habitat, and habitat used by Special Status Species will all benefit under this alternative.
4. Transportation. This alternative will substantially reduce the amount of new traffic generated in Novato. This will reduce effects at many study intersections to a degree that improvements required per the Draft Plan will not be necessary. There will be a substantial reduction in the congestion of arterials, collectors, and residential streets. The impact of Highway 101 operating at LOS F will occur even under this alternative.
5. Noise and Air Quality. As the amount of new traffic is reduced, there will be a corresponding decrease in noise generated by new traffic and the emission of air pollutants. While these impacts are not deemed significant (after mitigation) under the Draft Plan, a reduction in noise and air quality pollution are nevertheless important benefits.

6. Aesthetics. The reduced density and intensity of development will result in more vacant or undeveloped land remaining than will occur from buildout per the Draft Plan. For example, development of Site 6 (San Marin Business Park) near the northern entry of the City will have only 120,000 square feet of development rather than 1,100,000 square feet of development. This development could be clustered and located on this site so that views of much of the site remain open.
7. Public Services. The reduction in development will reduce the demand for additional water supplies, wastewater treatment capacity, and storm drain system improvements. There will be less need for more firefighters, police, and the equipment these emergency service providers require. There will be less need for new schools. On the other hand, there will be less property tax revenues that finance many of the public service providers.
8. Recreation. Fewer new residents will diminish the need for more parks and recreational facilities.
9. Land Use. Less land will be developed. The population will increase by about 5,350 people instead of 14,380 people that would be generated by buildout under the Draft Plan.

Summary

This project has substantial environmental benefits. It reduces impacts in virtually all categories of impact, though it does not eliminate the one significant impact of Highway 101 operating at LOS F. It is recognized that this alternative also provides much less new housing and fewer new job opportunities. As such, it may conflict with the Goals of the Draft Plan. Adoption of this alternative, which assumes the minimal legally required development, will likely be controversial and could lead to substantial litigation. However, as was stated in the beginning of this section on project alternatives, potential conflicts with non-environmental Objectives (or Goals) are not considered sufficient reason to dismiss an alternative.

Summary of Alternatives

CEQA requires that an EIR compare project alternatives among themselves and with the project as proposed and identify the "environmentally superior alternative."

In no case does the existing General Plan (Alternative 1) reduce the level of impact from future development as compared to the Draft Plan. It allows more development than the Draft Plan and thereby increases the degree of most impacts. It will generate more new traffic than any alternative except Alternative 3 thereby aggravating congestion on Highway 101 and Highway 37, as well as on other streets.

Alternative 2 (Reduced Development) would reduce the overall development potential, thereby resulting in a slightly smaller final population. It would eliminate the significant impact on Highway 37. It would not generate as much new traffic on Highway 101 as the Draft Plan.

Alternative 3 (Increased Development) would result in potentially significant effects on biotic resources in the Bayfront Overlay Zone. Development under this alternative will also have potentially significant visual impacts. There is no environmental advantage to this alternative.

Alternative 4 (Greatly Reduced Development) would reduce the overall development potential by 40 percent. This would result in fewer people, fewer jobs, less traffic congestion, less demand for public services, and fewer impacts on natural resources. It would eliminate the significant impact on Highway 37. While this alternative will not eliminate the significant impact of LOS F on portions of Highway 101 during peak hour traffic, it will not aggravate this problem as much as the Draft Plan.

Alternative 5 (Environmental Constraints Emphasis) would substantially reduce impacts on most biotic resources, including wetlands, native woodlands, wildlife habitat, riparian habitat, and habitat used by Special Status Species. This alternative could also result in positive aesthetic effects since development will be clustered. Otherwise, this alternative will have similar effects as the Draft Plan.

Alternative 6 (Compact Development) would have positive effects on biotic and aesthetic resources. There would be environmental benefits regarding less need for future roadway and intersection improvements and extension of public services.

Alternative 7 (No Growth) substantially reduces all impacts. However, like all the alternatives, it will not eliminate the fact that portions of Highway 101 will operate at Level of Service F during peak commute periods.

The Draft General Plan, as proposed, reduces potential environmental impacts in a number of areas. First, it provides specific direction for development to avoid substantial environmental constraints and hazards. It codifies many to most current best management practices and/or recent State and Federal laws regarding seismic safety, flooding, sensitive biotic species and habitats, water and air pollution, noise exposure, traffic safety, and public service infrastructure. More significantly, in reducing the overall development potential in Novato (compared to development allowed under the current General Plan), it focuses this reduction on the sites with the most hazards and/or constraints. In so doing, it reduces the amount of impact and the risk from developing in those areas.

Environmentally Superior Alternative

The Draft General Plan contains policies and programs that reduce most cumulative impacts to a level below significant. However, strictly from an environmental perspective, Alternative 7 would be the environmentally superior alternative because it eliminates one significant impact and substantially reduces all other impacts. It is noted that this alternative will also have economic and fiscal effects on the City not assessed in this EIR, and it may not be a superior alternative when all considerations and project Objectives are taken into account. If the City selects an alternative other than the alternative identified as the environmentally superior alternative, then the City must issue written findings as to why the superior alternative or alternatives were rejected in favor of the selected alternative.

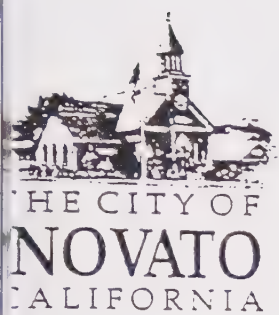
Comparing the alternatives on the grounds of elimination/reduction of environmental impacts, the following ranking applies (i.e., the alternatives at the top of the list are "superior").

1. Alternative 5
2. Alternative 4, Alternative 5, and Alternative 6 - all these alternatives, in different ways, substantially reduce environmental effects and are judged to be approximately equal
3. Alternative 2
4. Draft General Plan
5. Alternative 1
6. Alternative 3

6.0 APPENDIX

APPENDIX A

NOTICE OF PREPARATION AND RESPONSES



NOTICE OF PREPARATION OF A PROGRAM ENVIRONMENTAL IMPACT
REPORT FOR THE CITY OF NOVATO GENERAL PLAN REVISION PROGRAM

100 Sherman Avenue
Novato, CA 94945
415/897-4311
FAX 415/897-4354

Mayor
Bernard H. Meyers
Mayor Pro Tem
Ernest J. Gray
Councilmembers
Dennis Fishwick
Cynthia L. Murray
(5th member vacant)

City Manager
Roderick J. Wood

DATE: February 24, 1995

TO: Interested and Responsible Agencies, Groups, and Individuals

FROM: Paul Bickner, Senior Planner

SUBJECT: Preparation of a Program EIR for the City of Novato General
Plan Revision Program

The City of Novato is revising its General Plan consistent with State law. The program has identified a preferred General Plan Alternative. This preferred alternative, as well as the other two alternatives that will be assessed in the EIR, are described in the attached "Novato General Plan Revision Preferred Alternative Recommended by the City" report.

The City has contracted to have a Program EIR prepared on this preferred alternative; the EIR will also assess the two other alternatives to the degree required by CEQA. The Program EIR will be prepared consistent with Section 15163 of the CEQA Guidelines.

This is a full-scale revision of the current General Plan with the inclusion of a number of optional elements. The elements in the revised Plan will be: land use; transportation; housing; open space; conservation; parks and recreation; safety; noise; economic and fiscal development; human services; energy; public facilities; and aesthetics. As with the current General Plan, it will allow substantial amounts of new development within the City. New goals, policies, and implementation programs will change where development can occur. Future development under the revised General Plan will affect virtually all areas of the environment. These effects will be assessed in the EIR. Where required, mitigation measures beyond the policies and programs included in the Draft General Plan will be recommended. The EIR will assess the differences in impact from development under the preferred alternative as compared to the development currently allowed under the existing General Plan as well as assessing impacts from a third alternative.

Many specific impacts cannot be identified or clearly assessed at this stage. The EIR consultants will be responsible for examining all potential long-term impacts in the areas of geology, hydrology, vegetation, wildlife, archaeology, historic resources, traffic and circulation, noise, aesthetics, public services, public health, recreation, energy, population, and land use.

Interested and Responsible Agencies, Groups, and Individuals

Page 2

February 24, 1995

Request for Review

Please review all attached materials as soon as possible, but no later than 30 days from receipt of this notice. Please send all comments regarding the scope of the EIR to:

Novato Community Development Department

Attention: Paul Bickner

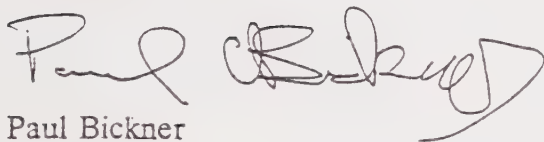
901 Sherman Avenue

Novato, CA 94945

Telephone No.: (415) 897-4342

Fax No.: (415) 899-1437

Sincerely,

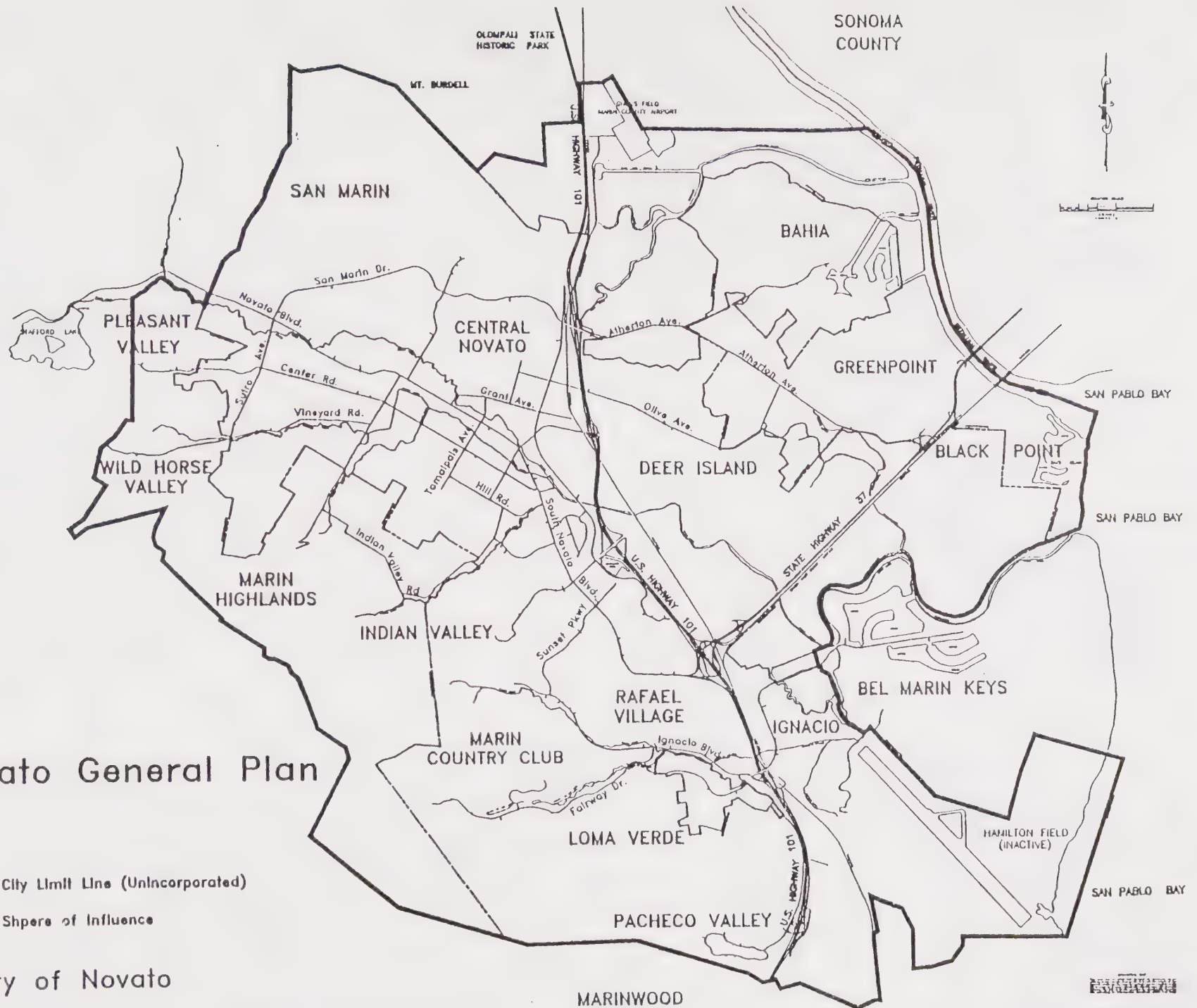
A handwritten signature in dark ink, appearing to read "Paul Bickner", with a stylized, sweeping flourish at the end.

Paul Bickner
Senior Planner

PB:mmc
Attachments

— — — — —





1995 Novato General Plan

Legend

- City Limit Line (Unincorporated)
- Sphere of Influence

City of Novato

Department of Community Development

DEPARTMENT OF TRANSPORTATION

23660

AND, CA 94623-0660

286-4444

(510) 286-4454



March 3, 1995

RECEIVED MAR 8 1995

Mrn-General
MRN000033

Mr. Paul Bickner, Senior Planner
Novato Community Development Department
901 Sherman Avenue
Novato, CA 94945

Re: Notice of Preparation: PROGRAM EIR FOR THE CITY OF NOVATO
GENERAL PLAN REVISION.

Dear Mr. Bickner:

Thank you for including the California Department of Transportation (Caltrans) in the early environmental review process for this project. We generally concur with the proposed scope of information to be addressed in the General Plan update and/or its Program EIR. In terms of transportation elements, we offer the following suggestions:

Growth Alternatives and Timing of Infrastructure Improvements:

The general plan, as a concept document, must provide a framework upon which the impacts of future proposals can be measured and evaluated. It provides the City an opportunity to explore relationships between alternative growth scenarios, projected traffic generation and the cost and timing of needed circulation improvements for each phase (to build out). The discussion of potential mitigation measures to address the impacts of general plan growth scenarios should include, but not be limited to, the areas of financing, scheduling, implementation responsibilities and lead agency monitoring.

Linkage Between Land Use and Transportation – Traffic Impacts:

All land use changes described in the general plan should be accompanied by new trip generation rates, distribution percentages and assignment volumes. The year and source of traffic counts and volumes should be provided. Information should be shown on traffic diagrams that depict accurate circulation patterns and represent local streets, main arterials and all State facilities. Caltrans is primarily interested in impacts

to State routes. AM and PM peak hour volumes and Average Daily Traffic (ADT) for weekdays and weekends should be included for both existing traffic and existing traffic plus traffic projected from the proposed land use changes.

Transportation Management Strategies:

The general plan should discuss the development of citywide Transportation System Management (TSM) and Transportation Demand Management (TDM) plans. The plans should define trip reduction and carpooling/vanpooling goals. Provisions for park and ride lots should be detailed. Accurate commuter information must be supplied in order to develop effective programs which are successful in reducing the demand for new transportation facilities.

Bicycle and pedestrian circulation and amenities should be discussed. Measures to encourage the use of transit options should be included.

We suggest that a discussion of strategies to achieve a jobs/housing balance be included. The discussion should go beyond a detailing of the number of units to number of jobs; it should examine the match of incomes to housing pricing. A supply of affordable housing for local workers reduces the need for long commutes. Caltrans considers this to be a trips reduction strategy.

Public/Private Sector Cooperation:

Guidelines should be developed within the general plan to encourage the participation of project proponents in the development and maintenance of an efficient transportation system. Joint impact mitigation measures and funding mechanisms, such as assessment districts, impact fees and right-of-way dedication, should be devised to fairly assess each project's responsibility.

Air Quality:

Air quality concerns should be fully addressed. Some communities have chosen to create separate air quality elements, while others have included this discussion in a conservation element.

MTC
METROPOLITAN
TRANSPORTATION
COMMISSION

March 9, 1995

Alameda County
EDWARD R. CAMPBELL
WILLIAM WITHROW
Contra Costa County
TOM POWERS
SHARON J. BROWN

Paul Bickner
Senior Planner
City of Novato Community Development Department
901 Sherman Avenue
Novato, CA 94945

Marin County
DOUG WILSON

Re: Notice of Preparation of a Draft Environmental Impact Report on the City of Novato's
General Plan Revision

Napa County
FRED NEGRI

Dear Mr. Bickner:

This letter contains Metropolitan Transportation Commission (MTC) staff recommendations on the transportation system impact analysis that should be included in the City's General Plan Revision EIR.

San Mateo County
MARY GRIFFIN
JANE BAKER
Chairwoman

The Preferred Alternative would permit a maximum of 4,252 additional units of housing (an increase of 21.1 percent over existing supply) and 3.49 million square feet of additional commercial space (45.5 percent increase over existing). These increases would represent total buildout permitted under the General Plan.

San Jose County
ROD DIRIDON
JAMES T. BEALL, JR.

General Plan build out would have expected impacts on the regional transportation system. The EIR's transportation analysis should provide existing and future (yr. 2010 or 2015) project generated traffic estimates for State Highways 37 and 101, arterials and local streets expected to be affected by the General Plan buildout.

Solano County
JAMES SPERING
Sonoma County
PETER C. FOPPIANO

The traffic information should be presented as ADT, peak hour trips and peak hour level of service (a.m. and p.m.). Traffic impact analyses on Highways 37 and 101 and local roads should at least cover the Sphere of Influence indicated by the 1995 General Plan map and include only fully funded transportation projects; unfunded or partially funded projects should be included as mitigation, with potential funding sources identified.

Association of
Bay Area Governments
DIANNE MCKENNA
Vice Chair

S.F. Bay Conservation
and Development
Commission
ANGELO J. SIRACUSA

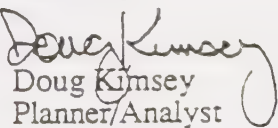
In addition to identifying unfunded transportation projects as mitigation, the EIR should also look at measures to reduce demand for single occupant vehicle use. Measures should include development site design to encourage transit use.

State Business,
Transportation and
Housing Agency
JOE BROWNE

U.S. Department
of Transportation
WILLIAM P. DUPLISSE

We look forward to reviewing the Draft EIR. In the meantime, if I can be of any assistance, please feel free to call me at (510) 464-7794.

Sincerely,


Doug Kimsey
Planner/Analyst

Executive Director
LAWRENCE D. DAHMS
Deputy Executive Director
WILLIAM F. HEIN

cc: Commissioner Wilson



GOLDEN GATE BRIDGE, HIGHWAY AND TRANSPORTATION DISTRICT

March 14, 1995

Mr. Paul Bickner
Senior Planner
Novato Community Development Department
901 Sherman Avenue
Novato, CA 94945

Dear Mr. Bickner:

Re: Draft EIR for Novato General Plan Revision

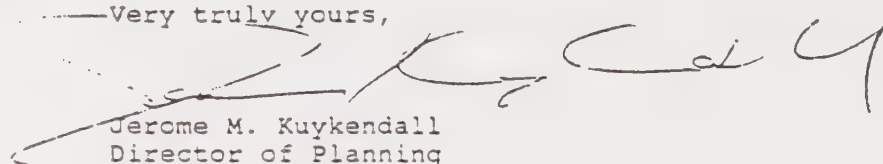
Thank you for this opportunity to review and comment on Notice of Preparation of a Draft Environmental Impact Report (DEIR) for the Novato General Plan Revision. The transportation paragraph, key feature 7, page 2, calls for "measures to increase transit use." The District suggests this document might address this issue in two ways.

There is, I believe, general recognition of the importance of land use in influencing transportation mode choice. The DEIR could address that interrelationship by varying development density according to proximity to transit lines. For example, Rafael Village is designated R-1, low density residential, although it is adjacent to transit service on Ignacio Boulevard. It could be designated as medium density to take advantage of its close proximity to transit and allow other development not adjacent to transit to be zoned to a lower density. Total residential units would be kept constant and traffic generation might thereby be reduced. Another land-use element to reduce automobile dependence is mixed land uses which reduce the need for off-site trips.

Second, certain design elements could be required in site plans to reduce automobile dependence and facilitate transit use. These include direct and safe sidewalks and paths for pedestrians and bicycles, space for bus stops including pull-outs and shelters located as close as possible to building entrances, and roads designed to accommodate buses. Novato's planning documents could encourage transit use through specific measures made part of the development process. Novato may also wish to consider the use of a portion of mitigation fees to support public transit.

District staff would be pleased to assist city staff in further developing plans to coordinate transportation and land use.

Very truly yours,


Jerome M. Kuykendall
Director of Planning
and Policy Analysis

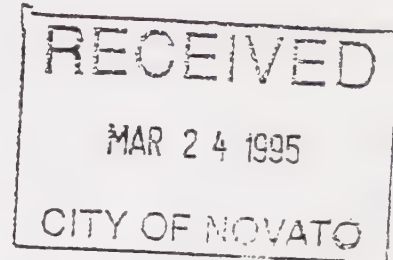
JMK:gj
c: Harvey A. Katz
b6:wp511hu11NOV01ENP.035

Marin County Community Development Agency

Mark J. Riesenfeld, AICP, Director

March 20, 1995

Novato Community Development Department
Attention: Paul Bickner
901 Sherman Ave
Novato, CA 94945



Subject: Notice of Preparation of a Program EIR for the City of Novato General Plan Revision

Dear Paul:

The County would like to take this opportunity to comment on the scope of the EIR for the Novato General Plan Revision. The following comments highlight concerns that the County has regarding the scope of the EIR and the analysis of plan alternatives:

1. CEQA requires that a "reasonable range of alternatives" to the project be analyzed in the EIR. When the Draft Revised Novato General Plan is completed, the "Preferred Alternative" will no longer be an alternative, it will be the "Project." For a project of this magnitude, it would seem appropriate to analyze more than two alternatives, one of which is the existing General Plan (the "No Project" alternative). Although CEQA does not require an exhaustive analysis of all possible scenarios, the analysis of only the existing plan and one other alternative would not appear to satisfy the requirement that a reasonable range of alternatives be analyzed. The EIR should include an alternative that is capable of eliminating any significant adverse environmental effects or reducing them to a level of insignificance. At a minimum, the EIR should analyze the relative merits of each of the alternatives described in the *Plan Alternatives Report*.
2. The information in the Notice of Preparation (NOP) does not indicate how the development potential in unincorporated areas will be handled in the EIR. The existing Novato General Plan and the revision of the General Plan (Preferred Alternative) contain land use recommendations for areas in the unincorporated County. In some cases, these designations are inconsistent with the designation in the recently adopted Countywide Plan. One of the alternatives in the EIR must analyze the impacts of development potential under the County's land use designation since the buildout will most likely occur under County jurisdiction.
3. The NOP states that the EIR will "assess the differences in impact from development under the preferred alternative as compared to development currently allowed under the existing General Plan as well as assessing impacts from a third alternative." CEQA (Section 15125(c)) requires that the EIR must utilize the existing level of physical development as a baseline for analysis. The two plans cannot be compared with each other without an analysis of how the impacts relate to the existing level of development.

The County appreciates the opportunity to comment on the Notice of Preparation. Many of the key features identified in the Preferred Alternative are valuable and consistent with similar features in the recently adopted Countywide Plan. These features include the protection of agriculture, protection of the environment, limitations on future commercial development, and focusing economic growth in the downtown area. We look forward to review of the Draft Revised General Plan and EIR.

Sincerely,

A handwritten signature in cursive script that reads "Kim Hansen".

Kim Hansen, AICP
Principal Planner



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region, HCD
777 Sonoma Avenue, Room 325
Santa Rosa, California 95404

March 22, 1995

F/SW02

Novato Community Development Department
Attention: Paul Bickner
901 Sherman Avenue
Novato, California 94945

Dear Mr. Bickner:

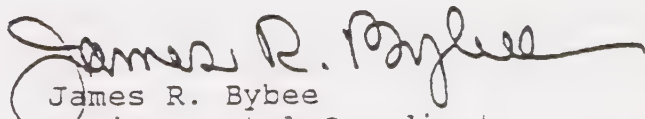
Thank you for the opportunity to comment on the Notice of Preparation of a Program Environmental Impact Report (EIR) for the City of Novato General Plan Revision Program. You state that both the Draft General Plan and the Draft EIR are scheduled for completion in spring, 1995.

The National Marine Fisheries Service (NMFS) is responsible for preserving and enhancing marine, estuarine, and anadromous fish resources and the habitats that support these resources. Because you state that "future development under the revised General Plan will affect virtually all areas of the environment", your EIR consultants should include fisheries when examining all potential long-term impacts.

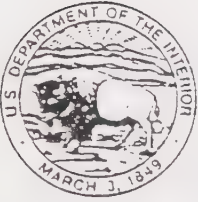
NMFS has been petitioned to list both coho salmon and steelhead trout as either threatened or endangered under the Endangered Species Act (ESA) coast wide from Washington to California. In the event of a positive finding critical habitat designations may include areas within your general plan. Future development that impacts wetlands, streams, riparian zones, or bay frontage may require review by NMFS in accordance with the ESA.

If you have questions concerning these comments please contact Mr. David Mattens of my staff. Questions concerning protected species should be directed to Mr. Gary Stern. Both individuals can be reached at the letter head address above or by telephone (707) 578-7513.

Sincerely,


James R. Bybee
Environmental Coordinator
Northern California





United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
Sacramento Field Office
2800 Cottage Way, Room E-1803
Sacramento, California 95825-1846

In Reply Refer To:
PPN 1751

March 27, 1995

Community and Development Department (Attn: Paul Bickner)
City of Novato
901 Sherman Avenue
Novato, California 94945

Subject: Notice of Preparation of a Draft Environmental Impact Report;
City of Novato General Plan Revision Program, San Pablo Bay,
Novato, Marin County, California


Dear Mr. Bickner:

The U.S. Fish and Wildlife Service (Service) has reviewed the Notice of Preparation of a Draft Environmental Impact Report for the City of Novato General Plan Revision Program, dated February 24, 1995. These comments are intended to assist you in your review of the proposal, and will not take the place of any formal comments that may be required under the provisions of the Fish and Wildlife Coordination Act.

Enclosure A provides a list of sensitive species that may occur in the county of the project area and general survey guidelines. Enclosure B recommends general guidelines for identifying and mitigating project impacts to fish, wildlife, and their habitats. We encourage you to use these guidelines to develop a comprehensive environmental document that addresses these needs.

If you have any questions regarding these comments, please contact Louise Lampara (Wetlands Branch) at (916) 979-2113.

Sincerely,


Joel A. Medlin
Field Supervisor

Enclosures

cc: Reg. Dir., (ARD-ES)
Reg. Mgr., CDFG, Reg. III, Yountville
L. Charles & Associates, San Anselmo
(w/enclosures to each)

ENCLOSURE A

Endangered Species. This attachment identifies those listed, proposed, and/or candidate species that may occur in the proposed project area. Information and maps concerning candidate species in California may be obtained from the California Natural Diversity Data Base, a program administered by the California Department of Fish and Game. Requests for information should be addressed to the Marketing Manager, California Department of Fish and Game, Natural Diversity Data Base, 1416 Ninth Street, Sacramento, California 95814. The marketing manager may be contacted by calling (916) 324-0562. You may request additional information from the Chief, California Department of Fish and Game, Non-Game Heritage Program, at (916) 324-8348.

Listed species are fully protected under the mandates of the Endangered Species Act (Act), as amended. Section 9 of the Act and its implementing regulations prohibit the "take" of a federally listed fish and wildlife species by any person, as defined by the Act. Take is defined by the Act "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such species. Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR § 17.3).

Take incidental to an otherwise lawful activity may be authorized by one of two procedures. If a Federal agency is involved with the permitting, funding, or carrying out of this project, initiation of formal consultation is required between that agency and the Service pursuant to Section 7 of the Act if it is determined that the proposed project may affect a federally listed species. Federal agencies must confer if they determine that the continued existence of a proposed species may be jeopardized by the project. Such consultation or conference could result in a biological opinion that addresses anticipated effects of the project to listed and proposed species. The biological opinion may authorize a limited level of incidental take for federally listed species.

If a Federal agency is not involved with the project, and federally listed species may be taken as part of the project, then an "incidental take" permit pursuant to Section 10(a) of the Act should be obtained. The Service may issue such a permit upon completion by the permit applicant of a satisfactory conservation plan for the listed species that may be affected by the project.

We recommend that appropriately designed surveys for listed, proposed, or candidate species be undertaken by qualified biologists. Surveys for plants should not be restricted to the identified species; instead, a complete botanical inventory of the project site should be conducted. Botanical surveys should be conducted at intervals throughout the spring and summer, in order to maximize the likelihood of encountering each species during the season most appropriate for accurate identification. Surveys should be based on field inspection, and not on prediction of occurrence based on habitat or physical features of the site. Guidelines for conducting adequate botanical surveys are available from the Natural Heritage Division of the California Department of Fish and Game at (916) 322-2493.

The results of all biological surveys should be published in the environmental impact report. The report should include a brief discussion of survey methods (including sampling methods and timing of surveys), results (including a list of all species encountered as well as maps of vegetation types, populations of plant species, and breeding, nesting or burrowing sites or other habitat components important to animal species), and conclusions. If it is concluded that a given sensitive species is not present, the justification for this conclusion should be fully explained.

Should these surveys determine that listed, proposed, or candidate species may be affected by the proposed project, the Service recommends that the project proponent, in consultation with this office and the California Department of

Fish and Game, develop a plan that mitigates for the project's direct and indirect impacts to these species and compensates for project-related loss of habitat. The mitigation plan also should be included in the environmental impact report.

One of the benefits of considering candidate species as well as listed and proposed species early in the planning process is that by exploring alternatives, it may be possible to avoid conflicts that could develop, should a candidate species become listed before the project is complete. In addition, in instances where the Service addresses proposed projects under its Fish and Wildlife Coordination Act authority, we must also analyze the impacts on candidate species and make recommendations to mitigate any adverse effects.

ENCLOSURE B

The goal of the U.S. Fish and Wildlife Service is to conserve, protect and enhance fish, wildlife, and their habitats by timely and effective provision of fish and wildlife information and recommendations. To assist us in accomplishing this goal, we would like to see the items described below discussed in your environmental documents for the proposed project.

Project Description. The document should very clearly state the purposes of, and document the needs for, the proposed project so that the capabilities of the various alternatives to meet the purposes and needs can be readily determined.

A thorough description of all permanent and temporary facilities to be constructed and work to be done as a part of the project should be included. The document should identify any new access roads, equipment staging areas, and gravel processing facilities which are needed. Figures accurately depicting proposed project features in relation to natural features (such as streams, wetlands, riparian areas, and other habitat types) in the project area should be included.

Affected Environment. The document should show the location of, and describe, all vegetative cover types in the areas potentially affected by all project alternatives and associated activities. Tables with acreages of each cover type with and without the project for each alternative would also be appropriate. We recommend that all wetlands in the project area be delineated and described according to the classification system found in the Service's Classification of Wetlands and Deepwater Habitats of the United States (Cowardin 1979). The Service's National Wetland Inventory maps would be one starting point for this effort.

The document should present and analyze a full range of alternatives to the proposed project. At least one alternative should be designed to avoid all impacts to wetlands, including riparian areas. Similarly, within each alternative, measures to minimize or avoid impacts to wetlands should be included.

Lists of fish and wildlife species expected to occur in the project area should be in the document. The lists should also indicate for each species whether or not it is a resident or migrant, and the period(s) of the year it would be expected in the project area.

Environmental Consequences. The sections on impacts to fish and wildlife should discuss impacts from vegetation removal (both permanent and temporary), filling or degradation of wetlands, interruption of wildlife migration corridors, and disturbance from trucks and other machinery during construction and/or operation. These sections should also analyze possible impacts to streams from construction of outfall structures, pipeline crossings, and filling. Impacts on water quality, including nutrient loading, sedimentation, toxics, biological oxygen demand, and temperature in receiving waters should also be discussed in detail along with the resultant effects on fish and aquatic invertebrates. Discussion of indirect impacts to fish, wildlife, and their habitats, including impacts from growth induced by the proposed project, should also be addressed in the document. The impacts of each alternative should be discussed in sufficient detail to allow comparison between the alternatives.

The cumulative impacts of the project, when viewed in conjunction with other past, existing, and foreseeable projects, need to be addressed. Cumulative impacts to fish, wildlife, wetlands and other habitats, and water quality should be included.

Mitigation Planning. Under provisions of the Fish and Wildlife Coordination Act, the Service advises the U.S. Army Corps of Engineers on projects involving dredge and fill activities in "waters of the United States", of which wetlands and some riparian habitats are subcategories. Since portions of this proposal may ultimately require a Corps permit, the Service will subsequently be involved under the Coordination Act. Therefore, if you have not done so already, we suggest that you or your representative consult the Corps regarding onsite wetlands and related habitats that may fall under their jurisdiction, and include this information in the draft document. When reviewing Corps public notices, the Service generally does not object to projects meeting the following criteria:

1. They are ecologically sound;
2. The least environmentally damaging reasonable alternative is selected;
3. Every reasonable effort is made to avoid or minimize damage or loss of fish and wildlife resources and uses;
4. All important recommended means and measures have been adopted, with guaranteed implementation to satisfactorily compensate for unavoidable damage or loss consistent with the appropriate mitigation goal; and
5. For wetlands and shallow water habitats, the proposed activity is clearly water dependent and there is a demonstrated public need.

The Service may recommend the "no project" alternative for those projects which do not meet all of the above criteria, and where there is likely to be a significant fish and wildlife resource loss.

When projects impacting waterways or wetlands are deemed acceptable to the Service, we recommend full mitigation for any impacts to fish and wildlife. The Council on Environmental Quality regulations for implementing the National Environmental Policy Act define mitigation to include: 1) avoiding the impact; 2) minimizing the impact; 3) rectifying the impact; 4) reducing or eliminating the impact over time; and 5) compensating for impacts. The Service supports and adopts this definition of mitigation and considers the specific elements to represent the desirable sequence of steps in the mitigation planning process. Accordingly, we maintain that the best way to mitigate for adverse biological impacts is to avoid them altogether.

The document should describe all measures proposed to avoid, minimize, or compensate for impacts to fish and wildlife and their habitats. The measures should be presented in as much detail as possible to allow us to evaluate their probable effectiveness.

Because of their very high value to migratory birds, and their ever-increasing scarcity in California, our mitigation goal for wetlands (including riparian and riverine wetlands) is no net loss of in-kind habitat value or acreage (whichever is greater).

For unavoidable impacts, to determine the mitigation credits available for a given mitigation project, we evaluate what conditions would exist on the mitigation site in the future in the absence of the mitigation actions, and compare those conditions to the conditions we would expect to develop on the site with implementation of the mitigation plan.

Mitigation habitat should be equal to or exceed the quality of the habitat to be affected by the project. Baseline information would need to be gathered at the impact site to be able to quantify this goal in terms of plant species diversity, shrub and tree canopy cover, stems/acre, tree height, etc. The ultimate success of the project should be judged according to these same measurements at the mitigation site.

Criteria should be developed for assessing the progress of the project during its developmental stages as well. Assessment criteria should include rates of plant growth, plant health, and evidence of natural reproduction. Success criteria should be geared toward equaling or exceeding the quality of the highest quality habitat to be affected. In other words, the mitigation effort would be deemed a success in relation to this goal if the mitigation site met or exceeded habitat measurements at a "model" site (plant cover, density, species diversity, etc.).

The plan should present the proposed ground elevations at the mitigation site, along with elevations in the adjacent areas. A comparison of the soils of the proposed mitigation and adjacent areas should also be included in the plan, and a determination made as to the suitability of the soils to support habitats consistent with the mitigation goals.

Because wetland ecosystems are driven by suitable hydrological conditions, additional information must be developed on the predicted hydrology of the mitigation site. The plan should describe the depth of the water table, and the frequency, duration, areal extent, and depth of flooding which would occur on the site. The hydrologic information should include an analysis of extreme conditions (drought, flooding) as well as typical conditions.

The plan must include a time frame for implementing the mitigation in relation to the proposed project. We recommend that mitigation be initiated prior to the onset of construction. If there will be a substantial time lag between project construction and completion of the mitigation, a net loss of habitat values would result, and more mitigation would be required to offset this loss.

Generally, monitoring of the mitigation site should occur annually for at least the first five years, biennially for years 6 through 11, and every five years thereafter until the mitigation has met all success criteria. Remediation efforts and additional monitoring should occur if success criteria are not met during the first five years. Some projects will require monitoring throughout the life of the project. Reports should be prepared after each monitoring session.

The plan should require the preparation of "as-built" plans. Such plans provide valuable information, especially if the mitigation effort fails. Similarly, a "time-zero" report should be mandated. This report would describe exactly what was done during the construction of the mitigation project, what problems were encountered, and what corrections or modifications to the plans were undertaken.

The plan should detail how the site is to be maintained during the mitigation establishment period, and how long the establishment period will be. It will also be important to note what entity will perform the maintenance activities, and what entity will ultimately own and manage the site. In addition, a mechanism to fund the maintenance and management of the site should be established and identified. A permanent easement should be placed on the property used for the mitigation that would preclude incompatible activities on the site in perpetuity.

Finally, in some cases, a performance bond may be required as part of the mitigation plan. The amount of the bond should be sufficient to cover the costs of designing and implementing an adequate mitigation plan (and purchasing land if needed) should the proposed plan not succeed.

Reference

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. FWS/OBS-79/31. U.S. Fish and Wildlife Service, Washington, D.C. 103 pp.

ENCLOSURE A

LISTED AND PROPOSED ENDANGERED AND THREATENED SPECIES AND
CANDIDATE SPECIES THAT MAY OCCUR IN THE AREA OR MAY BE AFFECTED BY PROJECTS IN
MARIN COUNTY, CALIFORNIA
(1-1-95-TA-572, MARCH 24, 1995)

Listed Species

Fish

winter-run chinook salmon, *Oncorhynchus tshawytscha* (E)
tidewater goby, *Euclyclogobius newberryi* (E)

Birds

bald eagle, *Haliaeetus leucocephalus* (E)
American peregrine falcon, *Falco peregrinus anatum* (E)
northern spotted owl, *Strix occidentalis caurina* (T)
California brown pelican, *Pelecanus occidentalis californicus* (E)
California clapper rail, *Rallus longirostris obsoletus* (E)
western snowy plover, coastal population, *Charadrius alexandrinus nivosus* (T)
marbled murrelet, *Brachyramphus marmoratus* (T)

Mammals

salt marsh harvest mouse, *Reithrodontomys raviventris* (E)

Invertebrates

mission blue butterfly, *Icaricia icariodes missionensis* (E)
Myrtle's silverspot butterfly, *Speyeria zerene myrtleae* (E)
California freshwater shrimp, *Syncaris pacifica* (E)
San Bruno elfin butterfly, *Incisalia mossii bayensis* (E)

Plants

Tiburon mariposa lily, *Calochortus tiburonensis* (T)
Tiburon paintbrush, *Castilleja affinis* ssp. *neglecta* (E)
Sonoma spineflower, *Chorizanthe valida* (E)
Marin dwarf-flax, *Hesperolinon congestum* (T)
beach layia, *Layia carnosa* (E)
Pt. Reyes clover lupine, *Lupinus tidestromii* var. *layneae* (E)
Tidestrom's clover lupine, *Lupinus tidestromii* var. *tidestromii* (E)
white-rayed pentachaeta, *Pentachaeta bellidiflora* (E)
Tiburon jewelflower, *Streptanthus niger* (E)

Proposed Species

Fish

Sacramento splittail, *Pogonichthys macrolepidotus* (PT)

Amphibians

California red-legged frog, *Rana aurora draytonii* (PE)

Candidate Species

Fish

green sturgeon, *Acipenser medirostris* (2R)
longfin smelt, *Spirinchus thaleichthys* (2R.)
River lamprey, *Lampetra ayresi* (2)
Pacific lamprey, *Lampetra tridentata* (2)

Candidates, continued

Amphibians

- California tiger salamander, *Ambystoma californiense* (1)
- foothill yellow-legged frog, *Rana boylei* (2)
- northern red-legged frog, *Rana aurora aurora* (2)

Reptiles

- northwestern pond turtle, *Clemmys marmorata marmorata* (2)
- California horned lizard, *Phrynosoma coronatum frontale* (2)

Birds

- tricolored blackbird, *Agelaius tricolor* (2)
- California black rail, *Lacertallus jamaicensis coturniculus* (1)
- San Pablo song sparrow, *Melospiza melodia samuelis* (2)
- salt marsh common yellowthroat, *Geothlypis trichas sinuosa* (2)
- Bell's sage sparrow, *Amphispiza belli belli* (2)
- little willow flycatcher, *Empidona traillii brewsteri* (2)
- Harlequin duck, *Histrionicus histrionicus* (2)
- ferruginous hawk, *Buteo regalis* (2)

Mammals

- Pacific western big-eared bat, *Plecotus townsendii townsendii* (2)
- Point Reyes mountain beaver, *Aplodontia rufa phaea* (2)
- greater western mastiff-bat, *Eumops perotis californicus* (2)
- Point Reyes jumping mouse, *Zapus trinotatus orarius* (2)
- Suisun ornate shrew, *Sorex ornatus sinuosus* (1)
- fringed myotis bat, *Myotis thysanodes* (2)
- long-eared myotis bat, *Myotis evotis* (2)
- long-legged myotis bat, *Myotis volans* (2)
- Yuma myotis bat, *Myotis yumanensis* (2)

Invertebrates

- bumblebee scarab beetle, *Lichnanthe ursina* (2)
- globose dune beetle, *Coelus globosus* (2)
- Marin elfin butterfly, *Incisalia mossii* (2)
- Nicklin's Peninsula Coast Range shoulderband snail, *Helminthoglypta nickliniana awania* (2)
- Opler's longhorn moth, *Adella operella* (2)
- Point Reyes blue butterfly, *Icaricia icariodes* ssp. (1)
- Ricksecker's water scavenger beetle, *Hydrochara rickseckeri* (2)
- Sonoma arctic skipper, *Carterocephalus palaemon* ssp. (2)
- Sandy beach tiger beetle, *Cicindella hirticollis gravida* (2)
- William's bronze shoulderband snail, *Helminthoglypta arrosa williamsi* (2)

Plants

- Blasdale's bentgrass, *Agrostis blasdalei* var. *blasdalei* (2)
- Sonoma alopecurus, *Alopecurus aequalis* var. *sonomensis* (1R)
- Tamalpais manzanita, *Arctostaphylos hookeri* ssp. *montana* (2)
- Point Reyes stickyseed, *Blennosperma nanum* var. *robustum* (2)
- Thurber's reedgrass, *Calamagrostis crassiglumis* (2)
- swamp harebell, *Campanula californica* (2)
- Mt. Vision ceanothus, *Ceanothus gloriosus* var. *porrectus* (2)
- Mason's ceanothus, *Ceanothus masonii* (2)
- San Francisco Bay spineflower, *Chorizanthe cuspidata* var. *cuspidata* (2)
- Mt. Tamalpais thistle, *Cirsium hydrophilum* var. *vaseyi* (2)
- Tomales clarkia, *Clarkia concinna* ssp. *raichei* (2)
- northcoast bird's-beak, *Cordylanthus maritimus* ssp. *palustris* (2)
- soft bird's-beak, *Cordylanthus mollis* ssp. *mollis* (1)
- Baker's larkspur, *Delphinium bakeri* (1)
- supple daisy, *Erigeron supplex* (2)
- San Francisco wallflower, *Erysimum franciscanum* (2)
- fragrant fritillary, *Fritillaria liliacea* (2)
- San Francisco gumplant, *Grindelia hirsutula* var. *maritima* (2)

Candidates, continued

Diablo rock-rose, *Helianthella castanea* (2)
seaside tarweed, *Hemizonia multicaulis* ssp. *multicaulis* (2)
Tiburon tarweed, *Hemizonia multicaulis* ssp. *vernalis* (2)
Santa Cruz tarweed, *Holocarpha macradenia* (1)
Kellogg's (wedge-leaved) horkelia, *Horkelia cuneata* ssp. *sericea* (2)
Point Reyes horkelia, *Horkelia marinensis* (2)
delta tule-pea, *Lathyrus jepsonii* var. *jepsonii* (2)
Tamalpais lessingia, *Lessingia micradenia* var. *micradenia* (2)
Mason's lilaeopsis, *Lilaeopsis masonii* (2)
coast lily, *Lilium maritimum* (1)
Point Reyes meadowfoam, *Limnanthes douglasii* var. *sulphurea* (2)
Santa Cruz microseris, *Microseris decipiens* (2)
Gairdner's yampah, *Perideridia gairdneri* ssp. *gairdneri* (2)
northcoast phacelia, *Phacelia insularis* var. *continentis* (2)
northcoast semaphore grass, *Pleuropogon hooverianus* (2)
Marin knotweed, *Polygonum marinense* (2)
California beaked-rush, *Rhynchospora californica* (2)
valley sagittaria, *Sagittaria sanfordii* (2)
Marin checkermallow, *Sidalcea hickmanii* ssp. *viridis* (2)
Tamalpais streptanthus, *Streptanthus batrachopus* (2)
showy Indian clover, *Trifolium amoenum* (1R)
San Francisco owl's-clover, *Triphysaria floribunda* (2)

- (E)--Endangered (T)--Threatened (P)--Proposed (CH)--Critical Habitat
(1)--Category 1: Taxa for which the Fish and Wildlife Service has sufficient biological information to support a proposal to list as endangered or threatened.
(2)--Category 2: Taxa for which existing information indicated may warrant listing, but for which substantial biological information to support a proposed rule is lacking.
(1R)--Recommended for Category 1 status.
(2R)--Recommended for Category 2 status.
(■)--Listing petitioned.
(*)--Possibly extinct.

SIERRA CLUB MARIN GROUP

110 San Mateo Way, Novato, CA 94945

5/27/95

Mr. Paul Rickner
Community Development Dept.
City of Novato
901 Sherman Ave.
Novato, CA 94945

Re: GenPlan NOP

Dear Paul:

Thank you for providing a copy of your ~~NOA~~ ~~to review the~~
Preparation of the Program EIR for the General Plan
revision.

One alternative should be an environmentally sensitive
alternative that would have reduced ~~commercial~~ ~~use~~ pull
the SOI and USA back to the city limits in most places, and
restrict development on slopes greater than 20%.

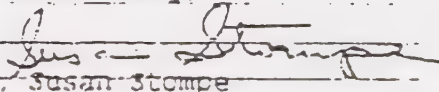
The analysis of all ~~alternatives~~ should identify the traffic
impacts, not just on city streets and intersections, but on
Highway 101, and the safety implications of traffic
congestion.

Quantitative analysis of ~~habitat values~~ ~~how much area for~~
various habitats are left, should be included, and compared
not with the existing situation, but with the area prior to
major human alteration with ~~leisure~~ ~~quarries~~ ~~fill~~.

Please provide thorough notice ~~when the draft EIR is~~
available for public review, as well as notice of the
Planning Commission and City Council hearings.

Thank you.

Yours Truly,


Susan Stompe

for the Executive Committee



THE ENVIRONMENTAL FORUM OF MARIN
P.O. BOX 74
LARKSPUR, CA 94977
TELEPHONE: (415) 479-7814

A NON-PROFIT CITIZEN GROUP DEVOTED TO EDUCATION IN MARIN COUNTY ON ENVIRONMENTAL MATTERS.

March 29, 1995

Mr. Paul Bickner, Senior Planner
Novato Community Development Department
901 Sherman Avenue
Novato, CA 94945

RE: CITY OF NOVATO GENERAL PLAN REVISION

Dear Mr. Bickner:

The Environmental Forum submits the following recommendations for consideration in the Novato General Plan EIR.

The Staff report identifies two alternatives to be evaluated in the EIR: (1) the current General Plan and (2) the preferred alternative as approved by the City Council. Because the current General Plan has a very high level of development potential, and the Preferred Alternative has a reduced moderate level, we suggest that the third alternative be an environmentally superior alternative that include the following recommendations. These recommendations are in keeping with those made in earlier correspondence from the Forum on this issue but did not appear in the Preferred Alternative.

Our recommendations on specific sites:

2. Brookside We had recommended an Open Space designation fore this site which was the subject of a bond measure to purchase. Since the Open Space designation refers to publicly owned land and this is not yet in public ownership, we recommend the closest most protective designation for privately owned land, i.e. Conservation 10, or a new designation that identifies land in private ownership that is slated for public acquisition.
3. Sutro Ave./Novato Blvd. This land is flood plain and should be evaluated as such. It should have a designation fitting its constraints i.e. creek buffer and flood ponding area.
4. Bahia should be Conservation 10 with one unit per 60 acres in the diked baylands. Low Density Residential (1 to 4 units per acres) for the upland would allow too many units. The uplands have extensive native oak woodland forest, hillside, special status species and flood plains constraints. The environmentally superior designation would be a new Rural density of 1 unit per 5 to 10 acres.
16. Diablo Triangle This site is flood plain and creek associated habitat. The site should be evaluated with a lower density fitting a flood plain and with the constraints of being located adjacent to a creek, i.e. creek buffer and flood ponding area.

21. Renaissance Estates Lower Density Rural Residential (1 unit per 5 to 10 acres) with constraints analysis of diked baylands, wetlands and oak woodland forest should be evaluated in the upland. Conservation 10 with no more than one unit per 60 acres should be permitted in diked baylands. A golf course, which would destroy wetlands and oak woodland, should not be permitted.

24. Hanna Ranch We are concerned that a .4 floor area ratio would damage resources on the site and on adjacent sites. Constraints analysis should consider oak woodlands, and the location adjacent of two sides to wetlands.

26. Rafael Village Retaining the entire site in affordable housing should be considered using the existing housing on the site. All creeks and drainages should have an adequate buffer, i.e. more than at present, if the housing is to be torn down.

36. City Portion of Hamilton should retain habitat values. Development of park uses should be evaluated for the impacts on wildlife and restricted to retain habitat values.

40. Buck Center Should not be considered for annexation to the City.

In addition to constraints identified in the Staff Report page 2, #5, we recommend that standards for the following constraints be included in the EIR: creeks and drainageways, native trees, forests, and other native plant communities such as grasslands, diked baylands, non-native trees that may have local value, and other important natural features such as serpentine soil and rock outcroppings.

Adverse impacts would occur with a new access road through diked baylands/seasonal wetlands for access to Bel Marin Keys Industrial Park and for better access to Olompali and Redwood Sanitary Landfill. Potential adverse of these new infrastructure improvements should be identified and analyzed.

We also have a number of concerns about the floor area ratios, and recommend the following be addressed to clarify and evaluate the impacts of the preferred FAR:

- although FARs are a valuable handle for insuring consistency for development and the major tool available for controlling bulk and mass, due to the way they are calculated they may underestimate these characteristics. Many built features which are necessary for a structure's aesthetic appeal, accessibility of functionality, aren't included in the calculation even though they add significantly to overall bulk and mass. The EIR should present a real picture of the bulk and mass that would result from a FAR of .6, .8 or 1.0. The EIR should reveal how much additional coverage could take place for garages, carports, decks, outside stairwells etc.

- the FAR bonuses offered as incentives for residential development, could be an increase of 40 to 60% over the .4 allowable if the difference is used for housing. The EIR should present a clear picture of the change in neighborhood character and feeling would be created by this increase.

- the maximum housing density for the three districts where the FAR increases are proposed. A 40% FAR increase in a Mixed Use zone permits up to 17,600 square floor area per acre which is sufficient for perhaps 10 to 25 units. The potential impacts of these increases should be identified and evaluated.

- to mitigate adverse impacts of the very high FAR, a mixed approach should be considered, such as attaching specific residential requirements for bonus densities particularly if the bonus densities are intended to support low and moderate housing. Additional guidelines should be

developed. For example, if the allowable FAR is 40% in a commercial zone, consider an increase to 50% if that 50% is then split 30% for commercial use and 20% for residential.

- there should also be an analysis of reducing the FAR particularly in the Neighborhood Commercial and in other commercial zones as well from .4 to .25 and a comparison of the impacts on the transit system and neighborhood character and feeling.

- the EIR should also evaluate whether it is possible to insure that any given building or development can be maintained in a mixed use at the level for this it was approved. For example, how do you deal with a request to convert to commercial from an owner of a development that is approved for a higher FAR based on assurances that one third of the structure will be apartment, but has difficult renting the living units but a high demand for the commercial.

Thank you for considering our comments.

Sincerely,

A handwritten signature in dark ink, appearing to read "Karol Raymer". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Karol Raymer
President



Marin Audubon Society Box 599 Mill Valley, California 94942-0599
March 29, 1995

VIA FACSIMILE 3/29/95

Paul Bickner, Senior Planner
City of Novato Community Development Department
901 Sherman
Novato, CA 94945

RE: SCOPING COMMENTS FOR GENERAL PLAN EIR

Dear Mr. Bickner:

The Marin Audubon Society requests that the questions raised and recommendations made in this letter be addressed in the EIR for the Novato General Plan. Although the Preferred Alternative will include a number of potentially environmentally beneficial approaches, there are a number of areas needing further analysis in order to disclose the potential impacts. We make recommendations for analysis in a number of subject areas.

Alternatives

In order for a full range of alternatives to be addressed and to present clear alternatives, we urge that the third alternative be an Environmentally Superior Alternative. While we understand that the Council direction was to address their other recommended improvements in the other alternative, some of these are in conflict environmentally. It would present a much clearer picture if transportation improvements (page 11) #1 through 3 were addressed as part of an environmentally superior alternative because they are environmentally beneficial or benign, but not #4 which would have serious adverse impacts to wetlands. Four of the 7 options (#3, 4, 5, and 6) listed on page 12 would have to be analyzed as part of the preferred or the current alternative analysis because of their potentially significant environmental impacts, whereas 1, 2 and 7 would be considered environmentally benign.

We believe including an Environmentally Superior Alternative would provide to the public and decision-makers, with the most meaningful range of options and would allow the most useful comparison among alternatives.

Constraints Approach

We support the constraints approach to evaluating resources on a particular site and the identification of wetlands and hazardous slopes as environmentally sensitive areas. Also included should be native forests, oaks and other native trees and other important native plant communities such as native grasslands, as well as unusual topographic features such as the rock outcroppings at the Buck Center site. Also, preserving creeks, streams, rivers and other drainageways are important to protect water quality, fish and wildlife habitat. Their value does not solely depend on whether or not they have riparian vegetation their full length. In fact, some creeks are tidal and therefore would have tidal marsh not riparian trees, while others, due to our Mediterranean climate or human-caused impacts, may not have any vegetation. We suggest, therefore, that the description of streams and creek resources not be restricted to those areas where there is riparian vegetation.

A Chapter of National Audubon Society

Flood plain protection should be considered an important constraint. As Novato is well aware, maintaining flood plains and overflow areas is essential to preventing flooding and expensive flood control construction and maintenance.

In addition, diked historic baylands, i.e. lands that once were subject to tidal action but were diked for agricultural production, should also be analyzed as environmental constraints. Which sites within the Novato's jurisdiction consist of diked baylands and do these sites have other areas that are developable should be evaluated.

Water Quality

Policies to assure protection of water quality in natural and modified creeks, streams, ponds, rivers, other drainages, and the Bay should be evaluated and improved if necessary. In brief, watershed protection should be advocated. Marin County and its cities are being required to support a Stormwater Management Program by the Regional Water Quality Control Board. To ensure compliance with this program, best management practices should be evaluated and required for development near drainageways. Buffers, protection of riparian and other streamside and wetland vegetation should also be required so that the discharge of urban pollutants from new development into streams, drainageways and the Bay is not increased. Vegetated buffer strips and other natural means of ensuring reduction in urban pollutants are preferred alternatives.

Biological Resources

Novato has many unique habitats. It has most of the few sites where native forests meet Bay wetlands. It has a major areas of diked bayland which provide important habitat and opportunities for restoration of marsh. Many species of migratory and resident wildlife depend on its tidal and in tidal marshes and on its upland habitats for nesting, feeding roosting and refueling during migration. The EIR should present a picture of the regional importance of Novato's habitats and of their importance for local species.

This section should address all areas of native vegetation, wildlife and other areas of wildlife habitat. The locations of tidal, seasonal, fresh or brackish water wetlands, important or unique areas of native vegetation such as native forests, native grasslands should be identified. Habitats where there are known or potential endangered species, or that are important for the survival of migratory or resident species, discussed and shown on a figure. Areas of unique topography, such as serpentine rock outcroppings, where endangered or unclassified spiders may live, should be addressed. The habitat values of creeks and wetlands should be discussed.

Resident and migratory birds and other wildlife that depend for all or part of their lives on habitats in Novato should be identified, and the habitats they depend on should be addressed. Movement corridors for wildlife must be assured protection. Transition habitat and buffers needed to complete or protect streams, wetland and other habitats should be provided.

Adverse impacts from proposed alternatives should be identified and compared. This analysis should include not only impacts of the development of houses, commercial, office etc. development but direct and indirect impacts of any new road, trails and other recreational facilities. Policies should advocate the of these important habitats by avoidance of impacts, and include measures to mitigate any impacts that are not avoidable.

Traffic/Circulation

Should the traffic analysis indicate that major new highway improvements would be needed under the preferred alternative, the analysis should also address the amount the development potential would need to be decreased to avoid the

major arterial and highway construction.

It should be recognized and evaluated that the expansion of Highway 101 to the Novato/Sonoma line and/or the construction of a new access from Bel Marin Keys to Hwy. 37 or 101 would not only have growth inducing impacts but these improvements would necessitate fill in tidal and/or seasonal wetlands.

Specific Sites

We continue to have particular concerns about the following sites, and urge that an alternative review reduced levels of development on these sites.

7. Bahia This 565 acre site consists largely of wetlands, most of which are habitat for the endangered salt-marsh harvest mouse, and oak woodland forest. These natural resources cannot be protected unless the development potential is significantly reduced. As we have stated in many previous letters, development should be clustered along Bugia Lane, and not be allowed to extend into forest or the wetlands. 160 to 640 units on this site could not be accomplished without destruction of forest and/or wetlands.

16. Diablo Triangle This site is on Novato Creek and is floodplain. The benefits of its retention in terms of overflow flood basin and the impacts of its development should be addressed.

21. Renaissance Faire Site This 238 acre site consists of diked baylands/seasonal wetlands and oak woodland forest. Units should be clustered in the quarry and along the existing access road where to avoid wetlands, diked baylands, native trees and forest. A golf course would necessitate the destruction of one third of the forest and of the diked baylands and, therefore, should not be allowed.

24. Hanna Ranch This site is immediately adjacent to wetland habitats, the Hahn mitigation pond to the north and the CA. Dept of Fish and Game wetland to the East. The site itself provides grassland and native trees habitats that are integral to maintaining values of the wetland habitats. Development should be clustered along the frontage road, should avoid impacts to adjacent habitats, protect the integrity of the knoll and its oak woodland savannah habitat. A FAR of .4 would require significant destruction of habitat and should be carefully evaluated.

Thank you for giving our comments consideration.

Sincerely,



Barbara Salzman, Chair
Conservation Committee

SAN FRANCISCO BAY CONSERVATION AND DEVELOPMENT COMMISSION

THIRTY VAN NESS AVENUE, SUITE 2011
SAN FRANCISCO, CALIFORNIA 94102-6080
PHONE: (415) 557-3686

May 16, 1995

Paul Bickner, Senior Planner
City of Novato
Community Development Department
901 Sherman Avenue
Novato, California 94945

SUBJECT: City of Novato Draft General Plan Revision Program, Notice Of Preparation
BCDC Inquiry File No. 7245.23; SCH No. 95033019

Dear Mr. Bickner:

Thank you for the opportunity to comment on the Draft General Plan Revision Program and Notice of Preparation for the City of Novato. Although the Commission has not had the opportunity to review the Program, the following are staff comments based on the McAteer-Petris Act, the *San Francisco Bay Plan*, and the Commission's advisory policies for diked historic baylands.

In general, the McAteer-Petris Act and the *San Francisco Bay Plan* regulate the purpose and manner in which the Commission can approve fill in the Bay and other tidally influenced areas, and ensure that new development provides appropriate coastal access to and along the Bay. Because the Draft General Plan Revision Program does not propose any development projects, authorization from the Commission is not required. Nevertheless, we are interested in the General Plan update and have the following comments.

It appears that the preferred alternative recognizes the significant environmental resources which exist along the City's shoreline and may include General Plan policies to conserve and develop these resources consistent with the McAteer-Petris Act and the *San Francisco Bay Plan*. In addition to the Commission's regulatory jurisdiction, the Commission has adopted advisory policies for the diked historic baylands in and around the City of Novato. Specifically, these policies recommend: (1) maintaining agricultural uses of diked historic baylands as long as feasible; and (2) avoiding development of diked historic baylands that can be enhanced to have high wildlife functions and values or that can be opened to tidal action (Please see the enclosed copy of the diked historic bayland policies). It is important to note that diked historic baylands represent one of the most important and last remaining opportunities for significant wetland restoration in the San Francisco Bay estuary. Cumulatively, the incremental development of diked historic baylands represents a significant and irreplaceable loss to the Bay ecosystem. While the Commission does not have regulatory authority over diked historic baylands, we believe every effort should be made to preserve and protect these areas because of their importance to the San Francisco Bay estuary.

As you are aware, the Commission is developing the North Bay Wetlands Protection Program to assist local governments in comprehensively protecting and restoring wetlands, riparian areas and diked historic baylands in the North Bay. To this end, the Commission staff supports the protection of agriculture, wetland, riparian, flood-plain and other environmentally sensitive resources in diked historic baylands through the adoption and implementation of comprehensive General Plan policies. In addition, we believe that the General Plan Revision Program should also identify policies to protect water quality by preventing and controlling polluted runoff from new developments or existing land uses adjacent to wetlands and riparian areas.

Mr. Paul Bickner, Senior Planner
May 16, 1995
Page 2

In conclusion, we support the City's efforts to protect the environmentally sensitive resources of San Francisco Bay and its diked historic baylands. Once again, thank you for the opportunity to comment on the Draft General Plan Revision Program and Notice of Preparation. If you have any questions regarding this matter, please do not hesitate to contact me.

Sincerely,

A handwritten signature in dark ink, appearing to read 'Nicholas Salcedo', written in a cursive style.

NICHOLAS SALCEDO
Coastal Program Analyst

Enc.

NS/gg

cc: Nadell Gayou, w/o encl.



NORTH MARIN WATER DISTRICT

999 RUSH CREEK PLACE • POST OFFICE BOX 146 • NOVATO, CALIFORNIA 94948 • (415) 897-4133 • FAX (415) 892-8043

June 20, 1994

Paul Bickner
Senior Planner
City of Novato
901 Sherman Ave.
Novato, CA 94945

RE: North Marin Water District Comments on "Preferred Plan Alternative" Recommended by the General Plan Steering Committee

Dear Mr. Bickner:

The District received the June 1, 1994 memo from Marjorie Macris and Paul-Andre Schabracq to the Novato Planning Commission regarding the subject preferred plan alternative. The District has reviewed the recommendations and offer the following comments:

1. Recommendations, I. Overview of the Recommended Preferred Alternative, Page 3
"4. Include specific standards in the Draft General Plan to identify buildable versus non-buildable portions of sites in or adjacent to environmentally sensitive areas such as steep slopes, wetlands and riparian corridors. A site-specific evaluation, termed a constraints analysis, would be required for land located in, or adjacent to, sensitive environmental areas as part of the development review process.
5. The amount of development permitted on a site in all land use categories would be based on the buildable area identified by the constraints analysis, which identifies environmentally sensitive areas on or adjacent to the site rather than on the entire acreage of the site."

NMWD Comment

As indicated in my February 16, 1994, letter (Attachment 1) regarding the Novato General Plan Revision Plan Alternatives Report Comment No. 5, the District intends to pursue development of emergency personnel employee housing on District owned infill property within Novato. Some of these properties were originally designated for or once used for water storage tanks or other water facilities. We request that the housing element of the City's General Plan be augmented with a policy stating that "The City of Novato will cooperate and work closely with agencies supplying a vital public service to help them realize affordable housing for emergency after-hours and standby personnel. Furthermore, the City shall give special consideration to residential development proposals and sites promoted by such agencies for this purpose." We request that this policy be included in the proposed General Plan and that the key features Numbers 4 and 5 of the Recommended Preferred Alternative identified above not be applied to the District's infill parcels (most are small in size having less than 1 acre) and will serve a vital need by providing employee housing for emergency and after-hours services.

Mr. Paul Bickner
June 20, 1994
page 2

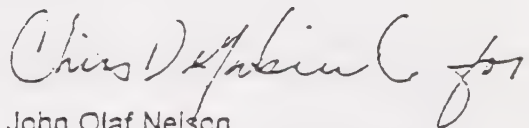
2. III. Site Specific Land Use Recommendations, Page 7

"2. Bayfront/Community Separator Areas: Includes the following sites: 7 Bahia; 21 Renaissance Faire; 29 Hamilton Runway; 18 East of DeLong Avenue; 33 West of Gness Field."

NMWD Comment

The land use designation is listed as conservation, very low density residential, and open space. This is inconsistent with Section IV. Recommendations For Vacant and Underdeveloped Sites, Number 18, which lists the land use designation has Freeway Oriented Low Density Business and Professional and Very Low Density Residential. The District currently owns 5.74 acres of the 33.16 acres evaluated at this site. This property, known in the District's studies as the Rosalia Site, has in the past and continues to be considered as a suitable site for a large (5 million gallon) finished water storage reservoir. Currently the District is focusing on sites for a new finished water storage reservoir in south Novato to accommodate the planned Hamilton Field Project development. Should at some point in the future this Rosalia site no longer be considered suitable for construction of finished water storage reservoir, the District would at that time propose construction of single family residences for District employee housing or surplus and sell the property for residential development and use the proceeds to purchase residential property elsewhere. We recommend the land use designation in Section III be revised to be consistent with that shown for Site 18 in Section IV.

Sincerely,



John Olaf Nelson
General Manager

JON:CD:bn

Enclosure: February 16, 1994 letter from John Olaf Nelson to Paul Bickner



NORTH MARIN WATER DISTRICT

999 RUSH CREEK PLACE • POST OFFICE BOX 146 • NOVATO, CALIFORNIA 94948 • (415) 897-4133 • FAX (415) 892-8043

March 22, 1995

Mr. Paul Bickner
Senior Planner
City of Novato
901 Sherman Avenue
Novato, CA 94945

Re: North Marin Water District Comments
Notice of Preparation of a Draft Environmental Impact Report - City of Novato General Plan
Revision Program

Dear Mr. Bickner:

The District is in receipt of your February 24, 1995, letter requesting review and comment of the Notice of Preparation for the subject DEIR. The District has reviewed your accompanying report "Novato General Plan Revision Preferred Alternative Recommended By the City Council" and we offer the following comments:

1. Summary

5. Constraints Analysis. "Include specific standards and procedures in the *General Plan* to identify buildable versus non-buildable portions of sites in or adjacent to environmentally sensitive areas such as hazardous slopes, wetlands, and riparian corridors. Require a site-specific constraints analysis to be conducted as part of the development review process in the sensitive environmental areas. Development would be permitted only on the unconstrained portions of the site as identified by the constraints analysis."

NMWD Comment

As indicated previously in our letters dated June 20, 1994 (Attachment 1) and February 16, 1994 (Attachment 2), the District intends to pursue development of emergency personnel employee housing on District-owned in-fill property within Novato. It is vital to, and in the best interest of our citizen-owner-customers that the District maintain a fast response capability to water pipeline breaks and other emergencies which could disrupt water service and or fire flows to our Novato customers. The properties owned by the District were originally designated for or once used for water storage tanks or other water facilities. We request that the housing element of the City's General Plan be augmented with a policy stating that: "The City of Novato will cooperate and work closely with agencies supplying a vital public service to help them realize affordable housing for emergency after hours and standby personnel. Furthermore, the City shall give special consideration to residential development proposals and sites promoted by such agencies for this purpose." We request that this policy be included in the proposed



General Plan and that the constraints analysis identified in key feature No. 5 of the recommended Preferred Alternative identified above not be applied to the District's in-fill parcels (most of these parcels are small in size having less than 1 acre.

2. Recommended Land Use Designations

"Public Utilities: This designation includes utility facilities, transformer stations, water and sewage treatment plants and related easements. Maximum floor area ratio is 0.25."

NMWD Comment

As indicated in our February 16, 1994 letter (Attachment 2) regarding the Novato General Plan Revision Plan Alternatives Report, Comment No. 1, it is still not clear whether the intent of this land use designation is to impose a zoning restriction on certain properties which would limit their use solely for public utility facilities. It should be noted that current state statutes exempt the location or construction of facilities for the production, generation, storage or transmission of water from zoning ordinances of a county or city and when the proposed use of a property is related to storage or transmission of water, a local agency (the District in this case) may render a city or county zoning ordinance inapplicable by a vote of 4/5 of its board members, (see Government Code Section 53091).

3. Recommendations For Vacant and Underdeveloped Sites

"18. East of DeLong Avenue. Very Low Density Residential. (EGP OR, R01, R-1, similar)"

NMWD Comment

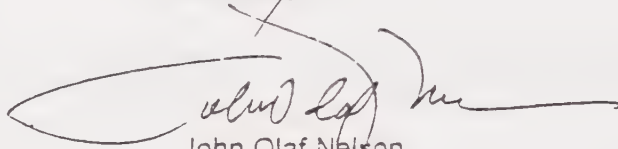
As indicated in our June 20, 1994 letter (Attachment 1) and February 15, 1994 letter (Attachment 2), the District currently owns 5.74 acres of the 33.16 acres evaluated at this site. This property, known in the District's studies as the Rosalia Site, has in the past and continues to be considered as a suitable site for a large (5 million gallon) enclosed finished water reservoir. Should at some point in the future this Rosalia site no longer be considered suitable for construction of a finished water storage reservoir, the District would at that time propose construction of single family residences for District employee housing or surplus and sell the property for residential development and use the proceeds to purchase residential property elsewhere. Even if a reservoir is developed on this site, we believe there is sufficient space to accommodate 1 or 2 single family dwellings. The District recommends the Draft General Plan and the DEIR reflect these potential uses.

We have now written you three times about these concerns and we note that our comments have not yet been addressed or reflected in either the recommendations for the Preferred Plan Alternative from the General Plan Steering Committee or in the Novato General Plan Revision Preferred Alternative recommended by the City Council. Furthermore, we have had no feedback from City staff. Are you hearing our concerns or are they being ignored or dismissed?

Mr. Paul Bickner
March 22, 1995
page 3

We sincerely hope that resolution of our comments is reflected in the Draft General Plan now being prepared and in the DEIR scheduled for completion in Spring 1995. If not, the District is prepared to pursue its legal remedies.

Sincerely,



John Olaf Nelson
General Manager

JON:CD:bn

Enclosures: June 20, 1994 Letter From John Olaf Nelson to Paul Bickner
February 16, 1994 Letter From John Olaf Nelson to Paul Bickner

cc: Bernard H. Meyers, Mayor
City of Novato
901 Sherman Ave.
Novato, CA 94947

Ernie Gray, Councilmember
Dennis Fishwick, Councilmember
Cynthia L. Murray, Councilmember
City of Novato
901 Sherman Avenue
Novato, CA 94945

Rod Wood, City Manager
City of Novato
901 Sherman Avenue
Novato, CA 94945

Vi Grinsteiner, Director
Community Development Dept.
City of Novato
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Novato, CA 94945

Supervisor Harry Moore
County of Marin
3501 Civic Center, Suite 315
San Rafael, CA 94913



NORTH MARIN WATER DISTRICT

999 RUSH CREEK PLACE • POST OFFICE BOX 146 • NOVATO, CALIFORNIA 94948 • (415) 897-4133 • FAX (415) 892-8043

February 16, 1994

Paul Bickner
Senior Planner
City of Novato
901 Sherman Avenue
Novato, CA 94945

Re: North Marin Water District Comments
Novato General Plan Revision Plan Alternatives Report

Dear Mr. Bickner:

The District has received the subject reports: Report 1 - Plan Alternatives Report, Report 2 - Economic Evaluation, and Report 3 - Strategy Report and Evaluation of General Plan Alternatives: Circulation Issues. We have no comments on Reports 2 and 3. We offer the following comments regarding Report 1 - Plan Alternatives Report:

1. Table 1 - Comparison of Land Use Designations Among Plan Alternatives, Page 9

Plan Alternatives 2 and 3 have conservation land use designations for public utilities which state: "This designation includes utility facilities, transformer stations, water treatment plants, and related easements. Maximum FAR of 0.25."

District Comment

It is not clear whether the intent of this land use designation is to impose a zoning restriction on certain properties which would limit their use solely for public utility facilities. It should be noted that current state statutes exempt the location or construction of facilities for the production, generation, storage or transmission of water from zoning ordinances of a county or city, and when the proposed use of a property is related to storage or transmission of water, a local agency (the District in this case) may render a city or county zoning ordinance inapplicable by a vote of 4/5 of its Board members.

2. Table 2 - Comparison of Goals Among Plan Alternatives, PUBLIC FACILITIES, Plan Alternatives 2 & 3, Page 14

"Manage growth by requiring the coordination of development with adequate infrastructure, public facilities and public services."

District Comment

The District permits water service to be provided to a proposed development only after discretionary land use approval has been obtained from the city or county having jurisdiction. The District also requires that new development pays the actual cost of expanding facilities to serve the subject development. In predicting future demand, the District relies on the General Plans of the City of Novato and County of Marin. Thus the North Marin Water District does not manage growth, but accommodates growth envisioned in the General Plans. Service, however, cannot be rendered without the developer first obtaining the necessary discretionary approval of the City or County.

3. 5. Vacant and Underdeveloped Sites. 18. East of DeLong Avenue

District Comment

The District currently owns 5.74 acres of the 30.1 acres evaluated at this site. This property (known in the District studies as the Rosalia site) has in the past and continues to be considered as a suitable site for a large (5 million gallon) finished water (enclosed) storage reservoir. Currently, the District is focusing on sites for a new finished water storage reservoir in south Novato to accommodate the planned Hamilton Field Project development. Should at some point in the future this Rosalia site no longer be considered suitable for construction of a finished water storage reservoir, the District would at that time propose construction of single family residences for District employee housing or surplus and sell the property.

4. 5. Vacant and Underdeveloped Sites. Build-out Comparison of the Plan Alternatives, Page 32

District Comment

The attached table is a summary of each Plan Alternative with data taken from the individual site descriptions in Section 5. We note the summation of the data from the individual site descriptions does not match with the summary data set forth in the build-out comparison of the Plan Alternatives shown on Page 32. The differences (errors) should be corrected.

5. 6. Comparison of the Plan Alternatives, C. HOUSING, Policy and Program Implications, Page 47

"If the City wishes to insure that housing units remain affordable, it would be necessary to adopt an inclusionary housing requirement with resale controls."

District Comment

This may be a very interesting and controversial policy and I am sure that the few District staff, who reside in Novato, will be interested to learn more about "inclusionary housing requirements with resale controls." The District believes the City should address the problem of housing needs for employees of all government agencies who are needed to furnish emergency and "after hours" services. As you may be aware, the District has attempted to address this need. In the future, the District intends to pursue development of emergency personnel employee housing on District owned infill property within Novato. Some of these properties were originally designated for water storage tank sites or other facilities and were not developed as such. The housing element of the City's General Plan should be augmented with a policy stating: "The City of Novato will cooperate and work closely with agencies supplying a vital public service to help them realize affordable housing for emergency, after hours and standby personnel. Furthermore, the City shall give special consideration to residential development proposals and sites promoted by such agencies for this purpose."

6. 6. Comparison of the Plan Alternatives, K. PUBLIC FACILITIES, Plan Alternative 2,
Page 51

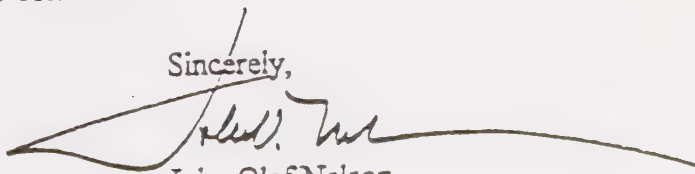
"The North Marin Water District and the Novato Sanitary District report that certain capital improvements will be necessary to provide water and sewer service adequate for "build-out" under Plan Alternative 1."

District Comment

The North Marin Water District requires capital improvements to provide water adequate for build-out scenarios adopted in the General Plan of the City and County. Currently, the District can readily modify its planned improvements and water supply commitments to accommodate any of the three alternatives being considered by the City. In any event, new development will be required to pay the actual cost of expanding facilities to serve said development.

Thank you for the opportunity to comment.

Sincerely,



John Olaf Nelson
General Manager

JON:CD:bn

Enclosures: Novato General Plan Revision
Alternative Comparisons

NOVATO GENERAL PLAN REVISION
ALTERNATIVE COMPARISONS

SITE	PROPERTY NAME	SIZE (acres)	CURRENT PENDING PROPOSAL (if any)	ALTERNATE 1 (1)		ALTERNATE 2 (2)		ALTERNATE 3 (3)	
				RESIDENTIAL (units)	COMMERCIAL (square feet)	RESIDENTIAL (units)	COMMERCIAL (square feet)	RESIDENTIAL (units)	COMMERCIAL (square feet)
1	Doe Hill	232	114 TH/C	161		5		5	
2	Brookdale	55	70 SFR	273		5		5	
3	Sutro/Novato Blvd	20	none	68		68		4	
4	San Marin/San Andreas	22	school site	220		220		110	
5	San Marin/San Carlos	28	school site	185		102		52	
6	San Marin Bus Park	51	business park		895,594	193	56,062		335,850
7	Bahia	565	729 units + commercial	1,966		57		57	
8	Black Point	78	20 SFR	376		7		7	
9	Rudnick	40	28 SFR	200		4		4	
10	Olive/Rodwood/Railroad	8	exlet conc plant & trailer park		138,521		138,521		138,521
11	Pinhelro Ranch	47	none	1,264	87,120	842	76,230	421	76,230
12	7th St. Hillside	17	none	74		1		1	
13,14,15	Hillside S. of Center	107	34 SFR	302		6		6	
16	Diablo Triangle	8	148 TH/C	239		159			138,695
17	Rodwood/Delong	14	50,000 sf Office	11	194,103	106		106	143,573
18	E. of Delong (Rosalia)	30	none	151		130		37	124,277
19	Windmill House	3	56,000 sf Office		59,590		14,898		59,590
20	US101/NWPRR(GGBP)	19	new hospital site		324,261	186			121,598
21	Renaissance Faire	239	152 SFR + GC		467,507	24		24	
22	Leveroni	164	none	18		3		3	
23	CalTrans(US101/Hwy37)	8	none		138,172				
24	Hanna Ranch	19	none		331,056	190			124,146
25	Sunset Pkwy Hillside	34	none	34		3		3	
26	Rafael Village	106	exlet 550 DU	550		530		530	
27	Anderson Rowe	59	none	1,183		296		60	
28	Bel Marin Keys	1571	1190 SFR + GC	157		26		26	
29	Hamilton Runway	700	none						
30	HAFB DODIF	460	exlet 950 DU	950		950		950	261,360
31	Independent Journal	10	none		174,240	50			65,340
32	Pacheco Ranch	17	none	2		1		1	
33	W. of Gnoes Field	99	none		1,724,976	2		2	
34	St Vincent/Silvera	272	none	27		5		5	
TOTALS FROM ABOVE		5100		8,411	4,535,140	4,171	285,711	2,419	1,589,180
BUILDOUT COMPARISONS		5116.37		8,411	5,232,100	4,171	285,711	2,419	1,643,891

(page 32 of Plan Alternatives Report)

- (1) Current adopted General Plan
 (2) "Housing Emphasis" alternative
 (3) "Jobs Emphasis" alternative

APPENDIX B

ELECTRIC AND MAGNETIC FIELDS (EMF) DATA

ATTACHMENT

August 31, 1995

Re: City of Novato GP and EIR

Mr. Paul Bickner, Senior Planner
City of Novato
Community Development Department
Planning Division
901 Sherman Avenue
Novato, CA 94945

Dear Mr. Bickner:

Thank you for the opportunity to present PG&E's comments about the City of Novato's General Plan EIR. PG&E commends the City of Novato's interest in addressing Electric and Magnetic Fields (EMF) in this EIR. PG&E is committed to increasing public awareness and education on this issue. Enclosed for your review is a package of information from a variety of sources on EMF.

The attached information includes a summary of a decision on this issue taken by the California Public Utilities Commission (CPUC), which regulates PG&E. In adopting its Interim Decision on EMF (Decision 93-11-01, November 2, 1993), the CPUC has proceeded with concepts that, at present, put California ahead of the rest of the nation, as well as other countries, in proactively addressing public concern about this issue.

Section 4.16 "Energy" of the Draft EIR addresses potential impacts attributed to EMF. Major scientific panels of national and international recognition have reviewed the issue of EMF. They concluded that the weight of the evidence does not show that EMF causes adverse health effects. Both the California Department of Health Services and the United States Environmental Protection Agency have clearly stated that standards are not recommended at this time. Because it is not known what or if any characteristic of magnetic fields would be appropriate to mitigate, imposing setbacks or exposure limits is considered premature. For these reasons we recommend that the discussion of EMF impacts and proposed mitigation, Impact 4.16-B on pages 226 and 227, be deleted and replaced with the following:

Objective 9: Given the uncertainty of the EMF issue, the medical and scientific communities have been unable to determine that EMF causes health effects or to establish any standard or level of exposure that is known to be either safe or harmful. Recognizing the emerging body of research on the health effects of EMF on humans is inconclusive, the City will continue to monitor this issue. The City will also maintain a public information program on the current state of knowledge about EMF and make this available to all citizens.

Policy:

- P.32 *When there are issues of public concern regarding EMF, the City will encourage efforts to minimize exposure to EMF when it can be accomplished with reasonable planning and investment.*
- P.33 *Other actions including the development of standards, such as thresholds, setbacks or siting restrictions, will not be encouraged by the City without health-based direction from the California Department of Health Services and the United States Environmental Protection Agency as to the safe and unsafe exposure from EMF.*
- P.34 *The City will continue to monitor the research and policy developments concerning EMF. Exposure standards if established in the future by state and federal agencies should be considered for inclusion into the general plan and applicable ordinances.*

The attached Exhibit A is the discussion of electric and magnetic fields that supports the above policy. PG&E recommends including this language in your General Plan EIR.

If you have any questions regarding our comments, please feel free to contact me at (707) 577-7267, or Bill Jeong at (415) 485-6135.

Sincerely,

Brenda San Julian
Land Agent

Enclosure

Electric and magnetic fields diminish rapidly with distance. Fields from compact sources—those containing coils or magnets such as small appliances and transformers — drop off rapidly with distance (r), by a factor of $1/r^3$. For example, doubling the distance from a small appliance will decrease the field eight fold. For power lines, if currents are balanced and conductors are close together, the magnetic field falls off at a rate of $1/r^2$, while fields from unbalanced current fall off at a rate of $1/r$. For example, doubling the distance from: (a) a balanced line would decrease the field fourfold, and (b) an unbalanced line would decrease the field by half.

While concern about EMF originally focused on electric fields, much of the recent research has focused on the magnetic fields. Considerable uncertainty exists as to what characteristics of a magnetic field exposure need to be considered to assess human exposures. Among those being considered are the field intensity, transients, harmonics, and the changes in intensity over time. These characteristics may vary from power lines to appliances to home wiring. This creates different type of exposures, other than the one most often considered, that of intensity or magnitude of the field measured in milligauss.

Possible Health Effects

Hundreds of major studies have been conducted over the last 20 or more years on electric and magnetic fields in areas of epidemiology, animal research and cellular studies. The earlier studies focused on electric rather than magnetic fields. Careful study by qualified epidemiologists in conjunction with other types of scientists reviewing research in their areas of expertise is needed to come to a credible conclusion.

It is standard practice in risk assessment and resulting policy-making to go to those multi-disciplined groups recognized nationally and internationally for their findings and consensus opinions. Many such groups have released reports in 1992, 1993, 1994 and 1995. Please see the attached list of these literature reviews. It is their ability to bring experts from a variety of disciplines together to review the full body of research on this very complex issue that gives their reports the credibility and recognition they have received. None of these groups concluded that EMF causes adverse health affects nor did they feel standards were appropriate or reasonable at this time.

In their report titled, *Electric and Magnetic Fields: Measurements and Possible Effects on Human Health*, the California Department of Health Services (DHS) states they have not been able to set a "safe" or "dangerous" level of magnetic field exposure from available scientific information, and they also discuss biological effects from magnetic fields. The DHS explains why at this time it is inappropriate to try to set levels:

Laboratory experiments have shown that magnetic fields can cause biologic changes in living cells, but we are not

Protection Association (IRPA). These standards have been adopted by many countries in Europe and also in Australia. State regulations have been developed for magnetic fields in New York and Florida at levels of 150 mG and 200 mG, which are based on limiting exposure from new facilities to no greater than existing facilities.

CALIFORNIA PUBLIC UTILITIES COMMISSION DECISION SUMMARY (Decision 93-11-01, November 2, 1993)

BACKGROUND

On January 15, 1991, the California Public Utilities Commission (CPUC) opened an investigation to consider its role in mitigating health effects, if any, of electric and magnetic fields from utility facilities and power lines.

A working group of interested parties, called the California EMF Consensus Group, was created by the Commission to advise it on this issue. The Consensus Group was charged to (i) consider a balanced set of facts and concerns; (ii) define near-term research objectives; and, (iii) develop interim policies and procedures to guide the electric utilities in educating their customers, reducing EMF, and responding to potential health concerns. It consisted of 17 stakeholders representing citizens groups, consumer groups, environmental groups, state agencies, unions, and utilities. The Consensus Group's fact-finding process was open to the public, and its report incorporated concerns expressed by the public. Its recommendations were filed with the Commission in March, 1992.

FINDINGS

Based on the work of the Consensus Group, written testimony, and evidentiary hearings, the CPUC in November, 1993, issued an interim decision to address public concern about possible EMF health effects from electric utility facilities. Among the findings:

We find that the body of scientific evidence continues to evolve. However, it is recognized that public concern and scientific uncertainty remain regarding the potential health effects of EMF exposure.

We do not find it appropriate to adopt any specific numerical standard in association with EMF until we have a firm scientific basis for adopting any particular value.

INTERIM DECISION

The decision specifically implements:

- **No-cost and low-cost steps to reduce EMF:** In response to a situation of scientific uncertainty and public concern, the CPUC felt it appropriate for utilities to take no-cost and low-cost measures where feasible to reduce

- A \$5,600,000 four-year non experimental and administrative research program: DHS will develop and administer the four-year research program specifically related to California electric utilities' facilities and power lines. Utilities are directed to fund this and the education programs.
- An authorization for federal experimental research conducted under the National Energy Policy Act (NEPA) of 1992: The Commission approved utility funding for the federal experimental research program established by the NEPA.

THE FUTURE

THE CPUC released an interim decision but will continue to monitor the issue and aspects such as existing facilities. As new studies develop in the future, the CPUC reserves the right to alter the decision in keeping with these findings.

How PG&E is implementing the CPUC EMF Policy

Since 1987, PG&E has had written company policies regarding EMF. PG&E has supported and funded medical, scientific and industry research on EMF for several years, and will continue to do so. PG&E is diligently working in collaboration with regulatory agencies, school officials, trade associations, research organizations and others to understand EMF better, and to find ways to help our customers make informed choices in their homes, schools and workplaces.

PG&E has a systemwide group of EMF Coordinators who are prepared to respond to customers' inquiries with up-to-date information. A package of information which includes materials from the U.S. Environmental Protection Agency, the California Department of Health Services, and other groups is offered to customers.

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- REPORT OF THE PANEL ON ELECTROMAGNETIC FIELDS AND HEALTH TO THE VICTORIAN GOVERNMENT, Panel on Electromagnetic Fields and Health, Australia, September 1992.

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- SYNTHESIS OF THE LITERATURE ON HEALTH EFFECTS FROM VERY LOW FREQUENCY ELECTRIC AND MAGNETIC FIELDS, INSERM (National Institute of Health & Medical Research), France, February 1993.
- MONITORING OF ONGOING RESEARCH ON THE HEALTH EFFECTS OF HIGH VOLTAGE TRANSMISSION LINES (Eighth Annual Report), Virginia Department of Health, Virginia, March 1993.
- CONNECTICUT 1993 REPORT ON TASK FORCE ACTIVITIES TO EVALUATE HEALTH EFFECTS FROM ELECTRIC AND MAGNETIC FIELDS, The Interagency Task Force Studying Electric and Magnetic Fields, Connecticut, March 1993.
- ELECTROMAGNETIC FIELDS AND THE RISK OF CANCER, Summary of the Views of the Advisory Group on Non-ionizing Radiation on Epidemiological Studies Published Since Its 1992 Report, The National Radiological Protection Board, United Kingdom, March 1993.
- HEALTH EFFECTS OF LOW-FREQUENCY ELECTRIC AND MAGNETIC FIELDS: UPDATE, Letter to the Editor of Science Magazine from the Oak Ridge Associated Universities Panel for The Committee on Interagency Radiation Research and Policy Coordination, United States, April 1993.
- RAPPORT OM RISIKO FOR KRÆFT HOS BØRN MED BOPÆL EKSPONERET FOR 50 HZ MAGNETFELTER FRA HØJSPÆNDINGSANLÆG, Expert Group on Non-Ionizing Radiation, The Danish Ministry of Health, Denmark, May 1993.
- EPIDEMIOLOGIC AND LABORATORY RESEARCH ON THE POTENTIAL HUMAN HEALTH EFFECTS FROM EXPOSURE TO POWER FREQUENCY ELECTRIC AND MAGNETIC FIELDS, Minnesota Environmental Quality Board, Minnesota, August 1993.

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- STATUS REPORT ON POTENTIAL HUMAN HEALTH EFFECTS ASSOCIATED WITH POWER FREQUENCY ELECTRIC AND MAGNETIC FIELDS, Maryland Department of Natural Resources and Public Service Commission of Maryland, Maryland, January 1994.
- POWER-LINE FREQUENCY EMF AND ITS RISKS TO HEALTH: A REVIEW OF THE SCIENTIFIC LITERATURE - 1992 SUPPLEMENT, The Universities Consortium on Electromagnetic Fields Investigation in Power Line Frequency EMF and Its Risks to Health, Colorado, February 1994.
- MONITORING OF ONGOING RESEARCH ON THE HEALTH EFFECTS OF HIGH VOLTAGE TRANSMISSION LINES (Ninth Annual Report), Virginia Department of Health, April 1994.
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- EFFECTS OF ELECTRIC AND MAGNETIC FIELDS, Report of the Council on Scientific Affairs to the American Medical Association, United States, December 1994.

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- POWER LINE FIELDS AND PUBLIC HEALTH, Council of the American Physical Society, United States, May 1995.

1992-1995 EMF LITERATURE REVIEWS

1992

- AN SAB REPORT: POTENTIAL CARCINOGENICITY OF ELECTRIC AND MAGNETIC FIELDS, The United States Environmental Protection Agency, Science Advisory Board, United States, January 1992.
- HEALTH EFFECTS OF EXPOSURE TO POWERLINE-FREQUENCY ELECTRIC AND MAGNETIC FIELDS, The Electromagnetic Health Effects Committee, Public Utilities Commission of Texas, Texas, March 1992.
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- POSSIBLE HEALTH EFFECTS OF EXTREMELY LOW FREQUENCY ELECTRIC AND MAGNETIC FIELD EXPOSURE: A REVIEW, The Illinois Department of Public Health, Illinois, March 1992.
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- ELECTROMAGNETIC FIELD HEALTH EFFECTS, The Connecticut Academy of Science and Engineering, Connecticut, April 1992.
- EXTREMELY LOW-FREQUENCY ELECTROMAGNETIC FIELDS AND HEALTH, The Health Council of the Netherlands, The Netherlands, April 1992.
- ELECTROMAGNETIC FIELDS AND THE RISK OF CANCER, Advisory Group on Non-ionizing Radiation, The National Radiological Protection Board, United Kingdom, 1992.
- HEALTH EFFECTS OF LOW-FREQUENCY ELECTRIC AND MAGNETIC FIELDS, An Oak Ridge Associated Universities Panel for The Committee on Interagency Radiation Research and Policy Coordination, United States, June 1992.

exposure from new or upgraded utility facilities. It directs that no-cost mitigation measures be undertaken, and that low-cost options shall be implemented through the project certification process. Four percent of total project budgeted cost is the benchmark in developing EMF mitigation guidelines, and mitigation measures should achieve some noticeable reductions. The Commission did not adopt specific reduction levels because scientific evidence is not sufficient upon which to base such numbers.

At the same time, the Commission did *not* approve utility retrofits of existing facilities solely to reduce EMF levels. This is because the science is too uncertain and the expense too large to change existing facilities. The CPUC will continue to monitor this issue and the question of existing facilities as the body of information develops. The Commission reserves the right to alter the decision in keeping with new findings.

- **Workshops to develop EMF design guidelines:** The order directs the Commission Advisory and Compliance Division to chair public EMF design guidelines workshops to incorporate EMF mitigation options and share information. The utilities are directed to establish written guidelines which incorporate concepts and criteria such as siting new facilities in alternative locations, increasing right of way widths, altering line or tower geometry, using higher voltages to reduce current levels, and undergrounding.
- **Uniform residential and workplace EMF measurement programs:** The major utilities already had implemented EMF measurement programs. However, the Commission directed utilities to compare their EMF measurement policies and establish a standard policy. EMF measurement policies are to be filed with the Commission and shared with customers. The Commission recognized that utility facilities may not be a major contributor to EMF exposure given the numerous fields surrounding grounding systems, electrical appliances, and electronic equipment. The Commission confirmed the educational value of providing measurements beyond the point of the utility meter. This includes sources beyond the control of utilities such as appliances, house wiring and grounding systems.
- **Stakeholder and public involvement:** The CPUC decision designated the California State Department of Health Services (DHS) as the research and education program manager, and asked DHS to determine what form of stakeholder and public involvement will best meet its needs in developing the research and education programs. Utilities are directed to fund DHS' stakeholder and public involvement activities, up to \$100,000 over the four years of the research and education programs.
- **A \$1,489,000 four year education program:** The utilities should continue to work with DHS and incorporate EMF educational information developed by DHS into their EMF education programs. This includes yearly bill inserts subject to review by the Commission's Public Advisor's Office.

sure whether there is any risk to human health associated with them.

A number of research studies are now under way to determine with greater certainty if magnetic fields do indeed pose any health risk and, if so, what aspect of the field is harmful. At this time, for example, no one knows the relative importance of average long term exposure, exposure to sudden high intensities, exposure to different frequencies, or various combinations of all these with other factors. Stronger fields may not always pose a greater risk than weaker fields, and we don't have enough information to say that "more is worse."

The Environmental Protection Agency document titled *Questions and Answers About Electric and Magnetic Fields (EMF)* published in December 1992 discusses biological effects and setting magnetic field exposure levels. The report states:

Some laboratory studies have shown that extremely low frequency (ELF) electric and magnetic fields can affect various activities of cells. The laboratory studies on biological effects also are uncertain. For example, many of the positive results have only been found in one laboratory. Usually, before a result is accepted as proof by scientists, it has been seen by several different investigators.

Additionally, it is not clear whether some of the biological effects seen in laboratory studies of cells would be harmful effects if they also occurred in people or whether they are minor changes that our bodies could adjust to.

The bottom line is that there is no established cause and effect relationship between EMF exposure and cancer or other disease. For this reason, we can't define a hazardous level of EMF exposure.

Strength, or the intensity, of a magnetic field is only one way to measure EMF. Take weather, for example: knowing the temperature outside does not tell you if you need an umbrella or whether it's windy. The same is true with the various characteristics of EMF. Looking only at the strength of a field may or may not tell you anything about another characteristic that in the future may be found to be relevant to your health.

No long term exposure health-based national, international or state EMF standards or regulations have been developed. Both the California Department of Health Services and the Environmental Protection Agency have clearly stated that standards are not recommended at this time. International standards based on induced body currents have been developed by the International Radiological

EXHIBIT A

ELECTRIC AND MAGNETIC FIELDS

The use of electricity has become an integral part of our daily lives and provides extensive benefits to society as a whole. Yet, in recent years, electric and magnetic fields (EMF) from this use have come under scientific scrutiny regarding their possible effects on human health.

Given the uncertainty of the EMF issue, the medical and scientific communities have been unable to determine that EMF causes adverse health effects or to establish any standard or level of exposure that is known to be either safe or harmful. Some studies have suggested an association between surrogate measures of magnetic fields and certain cancers, while others have not. Laboratory experiments have shown that magnetic fields can cause biologic changes in living cells, but scientists are not sure whether there is any risk to human health associated with them.

Electric and magnetic fields are invisible fields of force created by electric *voltage* (electric fields) and by electric *current* (magnetic fields). Voltage on any wire produces an electric field in the area surrounding the wire. Electric field strength is described in terms of voltage per unit distance at a specified position. Electric fields are commonly measured in volts per meter (V/M). A magnetic field is produced from current in a conductor. The magnetic field is measured in terms of lines of force per unit area. Measurements are given in gauss (G) or milligauss (mG) which is one thousandth of a gauss.

Power frequency electric and magnetic fields are found whenever electricity is used. This includes not only utility transmission and distribution lines, but also in the building wires in homes, offices and schools and in the appliances and machinery used in these locations. While concern about EMF originally focused on electric fields, much of the recent research has focused on the magnetic fields. Typical magnetic fields from the above sources can range from below 1.0 milligauss (mG) to above 1 Gauss or 1,000 mG.

APPENDIX C

COMMENTS AND RESPONSES TO COMMENTS ON THE ORIGINAL DRAFT EIR

This Appendix includes Comment letters and a summary of verbal comments received on the original Draft EIR that was circulated from July 18 to September 1, 1995. Because of the number of letters and the length of the responses, it was decided that this Appendix should be bound as a separate document. It is available for review at the Novato Community Development Department.

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